MIDIRS Search Pack

Search Pack PN63
Breastfeeding - professional attitudes, beliefs and knowledge

What do midwives and other health professionals know and understand about breastfeeding? What are their attitudes to it? Do they think it is the best form of feeding? Also includes education of health professionals about breastfeeding.

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PN63 - Breastfeeding - professional attitudes, beliefs and knowledge
(443)

990907-024

Finish the first breast first. Fisher C, Woolridge M (1999), RCM Midwives Journal vol 2, no 9, September 1999, p 278

The authors believe that recent articles, and older research papers, are possibly being misinterpreted and a 'new rule' of one breast per feed may be seen as the norm. Such dogma is not the case, and the baby should be allowed to feed at one or both breasts depending on circumstance. (3 references) (JAL)

990603-035

Lactation duration: influences of human milk replacements and formula samples on women planning postpartum employment. Chezem JC, Friesen C, Montgomery P, et al (1999), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 27, no 6, November/December 1998, pp 646-651

Objective: To examine the influences of in-hospital administration of breast milk replacements and receipt of formula samples on lactation duration among women planning postpartum employment. Design: Prospective design. Setting: Telephone interviews conducted prenatally and at 6 weeks, 3 months, and 6 months postpartum. Participants: Sixty-nine participants entered the study; 53 completed all scheduled interviews. Main Outcome Measures: Incidence and type of in-hospital human milk replacement, incidence and sources of formula samples, incidence of breastfeeding at 6 weeks postpartum, and duration of lactation. Results: During hospitalization, 19% of infants received formula; the incidence of breastfeeding at 6 weeks and duration of breastfeeding were significantly shorter in these infants compared with infants who were not fed formula. fifty-nine percent of participants received formula samples from the hospital, 30% received samples from a physician's office, and 51% received samples by mail. Receipt of formula samples by mail was associated with reduced incidence of breastfeeding at 6 weeks and shortened duration of lactation. Conclusions: Early formula feeding and receipt of formula samples by mail may be barriers to lactation in women employed outside the home. (20 references) (Author)

990408-009

Infant feeding guidelines: an evaluation of their effect on health professionals' knowledge and attitudes. Bleakney GM, McErlain S (1996), Journal of Human Nutrition and Dietetics vol 9, no 6, 1996, pp 437-450

Consensus infant feeding guidelines, which were developed by a multi-disciplinary working group, were adopted by the Eastern Health and Social Services Board (EHSSB) N. Ireland, in 1991. Implementation of the guidelines was undertaken using a cascade approach. Implementation teams were established in each of the nine Units of Management. These teams were provided with training and extra resources to facilitate the implementation process. In 1991, prior to the implementation of the guidelines, a postal survey was undertaken to establish the knowledge of infant feeding and attitudes to breastfeeding of health professionals working in the EHSSB area. Knowledge and attitude scales were developed for the questionnaire. The survey was repeated in 1993 to evaluate the impact and penetration of the guidelines. The penetration of the guidelines was good, 81% of respondents had read them. The knowledge of health professionals was significantly greater in 1993 than in 1991 ($P < 0.0001$); reading the guidelines was an independent variable for knowledge score (etay = 0.20, $P < 0.0001$). Health visitors exhibited the highest and general practitioners the lowest mean knowledge scores. Attitude scores in the 1993 survey were almost identical to those found in 1991; reading the guidelines was an independent variable for attitude score ($P < 0.0001$), however the size of the effect was small (etay = 0.04). (30 references) (Author)

990208-015

Helping mothers when you have strong feelings about their choices. Whelan J (1998), Leaven vol 34, no 6, December 1998-January 1999, p 130

Suggestions as to how to cope with a situation when the views or actions of a mother do not quite coincide with your own philosophy of care. (JAL)

990207-025

Good enough breastfeeding or good enough definitions? A contrary view. Minchin M (1999), MIDIRS Midwifery Digest vol 9, no 1, March 1999, pp 94-96

Optimal breastfeeding has been defined by various WHO documents. This pattern of successful infant feeding may be hard to achieve but health professionals should not patronise women by suggesting that they have been successful at breastfeeding if they do not achieve this ideal. The author presents an alternative view to an article reprinted in last December's Digest (1). 1. Hunter H. Good enough breastfeeding? New Generation Digest, no 22, June 1998, p 1. (MS)

990108-028

The carrot and its role in the promotion of breastfeeding. Dearling J (1999), Practising Midwife vol 2, no 1, January 1999, pp 19-20

Jeremy Dearling offers a challenging new way for midwives to convert women to breastfeeding which places more emphasis on its benefits for the mother. (Author)

981103-009

Changing the culture. Ciufo R (1999), Community Practitioner vol 71, no 11, November 1998, p 383

Breastfeeding can help prevent many child deaths every year. But if that's the case, asks Rosemary Ciufo, why are health professionals often so poor at promoting its benefits? (Author)

980824-006*

Breastfeeding: how to support success: a practical guide for health workers. Vinther T, Helsing E (1997), Copenhagen, Denmark: World Health Organization Regional Office for Europe 1997. 76p.

Mothers eager to breastfeed their infants are often reliant on health workers advice regarding breastfeeding. The knowledge and attitude of health workers can influence the success or failure of breastfeeding. However, the formal education of health workers on how to help mothers to cope with the process of lactation is often inadequate. This document is designed to guide health workers in the process of supporting mothers to breastfeed successfully. (Author)

980611-014

Which course? Invest in breast together. Spendlove D (1998), Practising Midwife vol 1, no 6, June 1998, p 45

Evaluation of a five-day course which aims to help midwives and health visitors work together to promote breastfeeding. (KL)

980604-006

Breast is best, but.... Shaw-Flach A (1998), Community Practitioner vol 71, no 6, June 1998, p 227

When health visitor Adelle Shaw-Flach experienced problems breastfeeding her second child, she found that community practitioners lacked the training and experience to support her adequately, and were too quick to suggest a switch to bottle-feeding. (Author)

980305-034

WHO/UNICEF baby friendly initiative - educating for success. Lang S, Dykes F (1998), British Journal of Midwifery vol 6, no 3, March 1998, pp 148-150

In 1991, the WHO/UNICEF Baby Friendly Hospital Initiative was launched. Globally, over 12 000 hospitals are now designated as `Baby Friendly.' The Baby Friendly Initiative was launched in the UK in 1994, and to date, five hospitals have received the award. As NHS Trusts work towards gaining `Baby Friendly' status, education of staff has become particularly important. This article, the first of a two part series, describes the adapted European WHO/UNICEF breastfeeding education programme currently being taught in the UK. The course is entitled `Breastfeeding management: a modular course' (WHO/UNICEF, 1997). (Author)

980208-003

Breastfeeding: a course for health professionals. Moxley S, Sims-Jones N, Bargha A, et al (1997), Canadian Nurse vol 93, no 9, October 1997, pp 35-38

With the recognition of the importance of breastfeeding to the health of mothers and infants, it is vital that nurses have the knowledge and skills to promote, support and protect breastfeeding in their community. The 'Promoting and suporting healthy lifestyles: breastfeeding' course was developed in 1994. The 39 hours of theory and six clinical hours

covers lactation and breastfeeding management for undergraduate and RN students and aims to educate nurses to promote, support and protect breastfeeding. (32 references) (Author, edited)

980201-036

Attitudes, practices, and recommendations by obstetricians about infant feeding. Howard CR, Schaffer SJ, Lawrence RA (1997), Birth vol 24, no 4, December 1997, pp 240-246

Background: Little information is available about the degree to which obstetricians promote breastfeeding through patient care practices and educational activities. The purpose of this study was to determine the attitudes, practices, and recommendations of obstetricians regarding infant feeding selection. Methods: A written survey was mailed to 148 obstetrician/gynecologists in Monroe County, New York (78% response rate, n = 116). Results: Of the 104 physicians in active obstetric practice, 86 percent conducted prenatal discussions about infant feeding with patients, 80 percent recommended breastfeeding, and 68 percent were commonly contacted postpartum by patients to address breastfeeding questions. Overall, 57 percent routinely incorporated these breastfeeding supportive practices into their prenatal and postpartum patient care. Attitudes about obstetric responsibility for infant feeding counselings and about the importance of counseling independently predicted the provision of these services. Infant feeding information was given to patients by 98 percent of obstetricians; 75 percent used written and 39 percent used videotaped materials. Formula company-produced infant feeding literature (41%), pregnancy literature (57%), and free formula offers (61%) were commonly used. Of those surveyed, 58 percent lacked training and 22 percent reported inadequate training in infant nutrition. Conclusions: Although most obstetricians in Monroe County provide infant feeding education and recommend breastfeeding, most report that their training about infant nutrition is inadequate, and they distribute infant formula company materials and offers to patients. Such discrepancies in patient care are inconsistent with promoting breastfeeding as optimal infant nutrition. (Author)

971213-002

The practice of promoting breast-feeding. Barrowclough J (1997), Midwives vol 110, no 1319, December 1997, pp 292-294

The increase in breast-feeding rates in the UK between 1990 and 1995 is most encouraging. However, lest it be a reaction to transient enthusiasm engendered by recent breast-feeding activities, it is worth exploring the lack of consensus among midwives as to the degree to which breast-feeding should be promoted by them, especially in the light of the decline in breast-feeding between 1980 and 1990. (21 references) (Author)

971203-029

Competency validation: breastfeeding support. Henrikson ML, Olson D (1997), Mother Baby Journal vol 2, no 6, November 1997, pp 13-20

Report of a survey to assess the quality, consistency, and type of information being given to breastfeeding mothers by postnatal and nursery staff. (KL)

971105-019

Monitoring the quality of breastfeeding advice. Robertson C, Goddard D (1997), Health Visitor vol 70, no 11, November 1997, pp 422-424

An audit of the breastfeeding practices of women in Birmingham discovered that many mothers do not start breastfeeding, or give up too early on. It also revealed worrying uncertainty among health visitors and doctors about the advice they give mothers. (22 references) (Author)

970405-040

Professional advice on common breastfeeding problems: a primary care study. Aggarwal R, Aggarwal A (1997), The British Journal of General Practice (BJGP) vol 47, no 416, March 1997, pp 173-174

This study investigated the advice given on breastfeeding problems by community health professionals involved with breastfeeding mothers in the Huntingdon area. A questionnaire on 10 common breastfeeding problems was used, and had a significant educational effect on the GP and health visitor groups. (Author)

970205-015

In-service breastfeeding program development: needs assessment and planning. Stokamer CL (1993), Journal of Human Lactation vol 9, no 4, December 1993, pp 253-2256

In-service program development requires that the individual offering it be familiar with needs assessment techniques and program planning. In order to provide a program appropriate to the audience's needs, the presenter needs first to identify and set goals for the program, identify objectives relevant to the participants' needs, outline the material to be presented, and select the most appropriate presentation methodologies and ways of evaluating the program. This discussion includes examples and sample assessment forms that are specific to a breastfeeding program. (Author)

970205-009

Evaluation of a breastfeeding protocol. Pinelli J, McGovern M, Edwards M, et al (1993), Journal of Human Lactation vol 9, no 4, December 1993, pp 223-230

A breastfeeding protocol has been field-tested in three hospitals. A pre- and post-test design was utilized to measure breastfeeding knowledge of health professionals and mothers before and after implementation of a standard breastfeeding protocol. Although results demonstrated a statistically significant increase in knowledge scores for health professionals and mothers, actual change in score was less than two percent and one percent respectively, compared to pre-intervention scores. Scores of both groups were not high and indicated limited knowledge in the health professional group in particular. Despite the fact that protocol implementation did not significantly alter knowledge scores, it did initiate positive changes in policies and procedures which may continue to influence knowledge and practice of health professionals. (Author)

970202-026

Breastfeeding: a course for health professionals. Moxley S, Sims-Jones N, Vargha A, et al (1996), Canadian Nurse vol 92, no 9, October 1996, pp 34-37

With the recognition of the importance of breastfeeding to the health of mothers and infants, it is vital that nurses have the knowledge and skills to promote, support and protect breastfeeding in their community. (Author)

970109-005

London centre offers senior staff breastfeeding practice and policy course. (1996), BFHI [Baby Friendly Hospital Initiative] News June/July 1996, pp 5, 7

The Centre for International Child Health in London provides a four week training course 'Breastfeeding: practice and Policy' which is designed to provide senior health professionals from throughout the world with the skills to train others in the promotion and support of breastfeeding. (KL)

970109-003

Lactation training centres in Thailand keep health workers up to date. Chatranon W (1996), BFHI [Baby Friendly Hospital Initiative] News June/July 1996, p 2

Interview with Wirapong Chatranon, Associate Professor of Medicine at the Siriraj Hospital at Mahidol University in Bangkok, a committee member for the Baby Friendly Hospital Initiative in Thailand. He describes the establishment of a lactation management training and resource centre which aims to improve the knowledge and competence of health professionals in lactation management skills. (SJH)

970109-002

Cote d'Ivoire decentralizes staff training. (1996), BFHI [Baby Friendly Hospital Initiative] News June/July 1996, pp 1, 6

The Cote d'Ivoire has a network of lactation trainers who train gynaecologists, paediatricians, midwives and nurses throughout the country. The initial training is followed up by sessions with health workers to help them implement the 'Ten steps to successful breastfeeding' of the Baby Friendly Hospital Initiative. (KL)

961225-025

Attitudes and knowledge regarding breast-feeding: a survey of obstetric residents in metropolitan areas of South Korea. Kim HS (1996), Southern Medical Journal vol 89, no 7, July 1996, pp 684-688

A 15-minute, 6-page questionnaire on breast-feeding was administered to the obstetric residents in four metropolitan academic training programs in Korea to assess their attitudes toward and knowledge about breast-feeding and their confidence in managing breast-feeding problems. the questionnaires were self-administered and confidential, and the participation rate was 84% (n = 76). Overall, the study participants indicated a neutral attitude toward breast-feeding (2.9 on a 6-point scale, where 1 equals the most positive attitude

and 6 equals the most negative attitude). Their self-confidence was inappropriately high, with 49% of the total sample describing themselves as 'confident' or 'very confident' to manage common breast-feeding problems. Female residents had a higher confidence level than male residents. Although high in self-confidence about breast-feeding, the residents in this study were not knowledgeable about breast-feeding management, answering only 38% of the questions correctly. To be truly supportive of breast-feeding, obstetricians should receive didactic and clinical training in breast-feeding management. (Author)

961212-042

Breastfeeding management in Kenya and Swaziland. Smith EJ (1987), International Journal of Childbirth Education vol 2, no 1, February 1987, pp 16-18

This article reports the results of a survey carried out by the Breastfeeding Information Group of Kenya in 1984, and of a smaller study in Zimbabwe. It explores health care workers' knowledge about breastfeeding including nipple preparation and supplementary feeding. (10 references) (AV)

961102-022

Standing feeding orders in a well-baby nursery: 'Water, water everywhere...'. Zimmerman DR, Bernstein WR (1996), Journal of Human Lactation vol 12, no 3, September 1996, pp 189-192

The objective of this study was to examine standing physician orders affecting healthy breastfeeding newborns for items not in concert with the 'Ten Steps to Successful Breastfeeding'. All order sets of physicians or physician groups (n=22) at a mid-sized hospital in central New Jersey (USA) (approximately 1200 deliveries /year) were reviewed. Seventeen orders called for water to be offered routinely as the first feeding. Five order sets called for two or more such feeds. Twelve orders gave infants nothing by mouth (NPO) for more than 2 hours and six mandated 4-hour intervals between feedings. Practices that undermine successful breastfeeding are still ubiquitous. Physician orders, in addition to hospital policy, should be targeted for improvement. (Author)

960827-017

Why won't they let us breastfeed our babies?. Dewar J (1996), Daily Mail 4 June 1996, p 47

Two women describe how their attempts to breastfeed were thwarted by hospital staff who gave bottles rather than encouraging and supporting breastfeeding. (SJH)

960815-011

Implementing the code in East and Central Europe. Lhotska L, Sokol E (1994), Penang, Malaysia: International Baby Food Action Network (IBFAN), International Code Documentation Centre 1994. 38p

Report of a seminar organised by the International Code Documentation Centre to train health professionals to promote breastfeeding in Eastern and Central Europe and to implement the International Code for the Marketing of Breast Milk Substitutes. (NB: 'Any portion of this report may be reproduced for use by non-profit organisations provided credit is given to IBFAN/ICDC). (KL)

960717-120

The 'lactation game:' An innovative teaching method for health care professionals. Elder SB, Gregory C (1996), Journal of Human Lactation vol 12, no 2, June 1996, pp 137-138

The 'Lactation Game' is a teaching tool designed to provide breastfeeding education to physician residents in an obstetrics and gynecology program. The game format encourages a participatory learning experience while providing information in a non-threatening environment. (Author)

960717-116

Nurses' attitudes and behaviors that promote breastfeeding. Patton CB, Beaman M, Csar N, et al (1996), Journal of Human Lactation vol 12, no 2, June 1996, pp 111-115

This descriptive correlation study determined the attitudes and behaviors of obstetrics nurses toward breastfeeding and early lactation. Maternity nursing staff at 20 Midwestern hospitals, representing all levels of prenatal care in urban and rural settings, voluntarily answered a 19-item questionnaire. A total of 230 anonymous responses were received. Sixty-four percent of the nurses would recommend or actively encourage breastfeeding and were very interested in helping a woman learn how to breastfeed. Time factors, including shortened length of stay, and lack of knowledge

were perceived to be the primary barriers for nurses in assisting mothers to breastfeed. Nurses who cited length of stay as a barrier had more years in obstetric nursing ($p < .05$). Level of nurses' education correlated positively to active encouragement and support of breastfeeding ($p = .024$), as well as personal breastfeeding experience ($p = .02$). The average discharge breastfeeding rate at the study hospitals was 40 percent, well below the national average of 56 percent. Both education and personal experience influence the nurse's attitudes and behaviors in the promoting of breastfeeding. These nurses perceived breastfeeding support as too time-consuming, which suggests that they have not fully adapted to shorter obstetric stays. Nurses need support and continuing education to identify personal bias and knowledge deficits which hinder breastfeeding promotion. (Author)

960717-115

Methods and outcomes of breastfeeding instruction for nursing students. Freed GL, Clark SJ, Harris BG, et al (1996), Journal of Human Lactation vol 12, no 2, June 1996, pp 105-110

Support from nurses can influence breastfeeding rates, but many nurses are not well-informed about breastfeeding topics. Surveys were used to assess the breastfeeding instruction provided in five nursing programs. Most students attended breastfeeding lectures, but only one-fourth received breastfeeding information during clinical activities. After completing their maternity rotation, less than 25 percent had as many as three clinical opportunities to teach breastfeeding techniques or counsel about lactation problems. Completion of maternity rotation did not improve students' knowledge of breastfeeding health benefits or clinical advice. Previous personal breastfeeding experience was associated with more accurate clinical advice and rating breastfeeding instruction as inadequate. We conclude that nursing education may not prepare students for effective breastfeeding promotion, and we suggest solutions for lactation consultants. (Author)

960711-077

Infant feeding. Midwives in the firing line. Carter J (1996), Midwives vol 109, no 1301, June 1996, pp 150-153

James Carter continues his investigation into the issues surrounding breast-feeding and bottle-feeding. (Author)

960611-008*

Breastfeeding quiz for health professionals. Scottish Joint Breastfeeding Initiative (1995), Edinburgh: Scottish Joint Breastfeeding Initiative 1995. 6p

Leaflet produced by the Scottish Joint Breastfeeding Initiative and circulated as part of the National Breastfeeding Awareness week campaign, 20-26 May 1996, giving a quiz , plus answers, to test health professionals' knowledge of breastfeeding. (KL)

960603-082

Breastfeeding workshops. A focus on knowledge, skills and attitudes. Long L (1996), Association of Breastfeeding Mothers vol 17, March 1996, pp 22-24

Description of workshops set up to train midwives in the promotion of breastfeeding. (KL)

960603-012

Breast is best? Try telling the midwife. Welford H (1996), Independent 21 May 1996, pp 6-7

Hospitals give up too easily when mothers run into problems. Health professionals need more training to help women overcome any initial problems. (Author, edited)

960516-001*

Breastfeeding facts pack. Welford H (1995), Edinburgh: Health Education Board for Scotland 1995. 59p

Fact pack on breastfeeding for health professionals to help ensure that mothers receive consistent advice and support on breastfeeding. (KL)

960509-020

Breast-feeding training for health professionals and resultant institutional changes. Westphal MF, Taddei JAC, Venancio SI, et al (1995), Bulletin of the World Health Organization vol 73, no 4, 1995, pp 461-468

Assessed is a breast-feeding training course that was attended by health professionals at the Santos Lactation Center

(SLC), Santos, Sao Paulo, Brazil, as well as its impact on the implementation of breast-feeding programmes in maternity hospitals. Eight maternity hospitals were studied - four were randomly allocated to the experimental group and sent three health professionals to attend an 18-day course at SLC; the remaining four institutions constituted the control group. The compliance of all eight hospitals with WHO/UNICEF's 'Ten steps for successful breast-feeding' was determined using scores obtained before and 6 months after the training course. Institutions in the experimental group had an improved score, but those in the control group did not. The SLC training course was efficient since it enabled the participants to promote breast-feeding practices. However, in order to succeed in implementing breast-feeding programmes, health professionals require also to develop skills to apply the knowledge they acquire in the course, as well as to involve the whole maternity unit team in the activities. (Author)

960328-067

Training health workers in breastfeeding management. (1996), ALCA News vol 6, no 3, March 1996, pp 34-36

Guidelines for the provision of training of health workers in the promotion and support of breastfeeding. (KL)

960227-011

The role of doctors in influencing infant feeding practices in South India. Fidler K, Costello A (1995), Tropical Doctor vol 25, no 4, October 1995, pp 178-180

Infant feeding practices are influenced by many factors including culture, household income, literacy, advice from health care workers and advertising. In South India doctors play a very significant role in influencing a mother's decision about when or whether to supplement breastfeeding with formula feeds. Doctors exert their influence on mothers both directly and indirectly, and they are increasingly targeted by commercial infant food companies. Doctors need continuing education about nutrition education, lactation management, and a greater awareness about the influence of inappropriate promotional practices by companies. (Author)

960217-034*

Breastfeeding promotion in Central America: high impact at low cost. Huffman SL, Panagides D, Rosenbaum J, et al (1991), Washington DC: Academy for Educational Development 1991. 45p

Report evaluating strategies to promote the use of breastfeeding in three countries in Central America. The CALMA project in El Salvador emphasised the training of health workers in both urban and rural areas and worked directly with mothers through support groups in hospitals and through peer counsellors. The PROALMA project in Honduras consisted of a major mass media campaign to promote breastfeeding, followed by training of health professionals; and the Panama Breastfeeding Promotion project included training of health professionals, local mass media promotion, and research into working women at a national level. (KL)

960213-059

Breast-feeding education of obstetrics-gynecology residents and practitioners. Freed GL, Clark SJ, Cefalo RC, et al (1995), American Journal of Obstetrics & Gynecology (AJOG) vol 173, no 5, November 1995, pp 1607-1613

Objective: Our purpose was to assess breast-feeding education, knowledge, attitudes, and practices among resident and practices among resident and practising obstetrician-gynecologists. Study Design: A mailed survey was administered to a national sample of resident and practising obstetrician-gynecologists. Results: Response rates were 64% for residents and 69% for practitioners. Residency training included limited opportunity for direct patient interaction regarding breast-feeding; 60% of practitioners recommended that training devote more time to breast-feeding counseling skills. Only 38% of residents reported that obstetric faculty presented breast-feeding topics; more common sources were nursing staff and other residents. Practitioners rated themselves as more effective in meeting the needs of breast-feeding patients than were residents; prior personal breast-feeding experience was a significant influence on perceived effectiveness. Almost all respondents agreed that obstetrician-gynecologists have a role in breast-feeding promotion, but significant deficits in knowledge of breast-feeding benefits and clinical management were found. Conclusion: Residency training and continuing education programs should create opportunities to practice breast-feeding promotion skills and emphasize management of common lactation problems. (Author)

960129-081

Breastmilk and formula milk - what's the difference?. Inch S (1996), MIDIRS Midwifery Digest vol 6, no 1, March 1996, pp 80-84

In this, the first of two articles on this vital subject, Sally Inch explains why more midwives should acquire the practical skills necessary to ensure that women who want to breastfeed succeed in doing so. (Author)

960107-048

Health professionals and breastfeeding counseling: client and provider views. Coreil J, Bryant CA, Westover BJ, et al (1995), Journal of Human Lactation vol 11, no 4, December 1995, pp 265-271

Health care providers are the most influential and trusted source of information about breastfeeding, yet many are neither prepared nor able to provide good breastfeeding counseling to their clients. This paper reports findings on low-income mothers' and on providers' perceptions of professional breastfeeding counseling. Data collection included focus group discussions with mothers recruited from public health department clinics in the Southeast USA and who were stratified by age, parity, rural/urban residence and feeding method, and focus groups and individual interviews were conducted with health care providers from the same geographic area. The results of the study indicate a gap between the promotion and support processes for breastfeeding, and point to areas where breastfeeding counseling can be strengthened. (Author)

960107-047

The medicalization of breastfeeding. Auerbach KG (1995), Journal of Human Lactation vol 11, no 4, December 1995, pp 259-260

The editor discusses the increasing role of the doctor in the promotion and encouragement of breastfeeding in the United States, and the establishment of the Academy of Breastfeeding Medicine (ABM) which aims to train physicians in the care of breastfeeding babies and mothers. (KL)

960103-027

Transforming health colleagues into breastfeeding advocates. (1995), ALCA News vol 6, no 2, 1995, pp 20-22

Guidelines for encouraging health professionals in their promotion of the benefits of breastfeeding. (KL)

951121-003*

Oxford infant feeding survey. Inch S (1991), Oxford: John Radcliffe Maternity Centre 1991. 55p

Report of a survey conducted among staff at the John Radcliffe Maternity Unit in 1991 as part of the data collected to help encourage women to initiate breastfeeding before discharge from hospital. The questionnaire used was the same as that of an earlier survey in 1988, allowing direct comparison of the results. Results show that primary health care staff are generally knowledgeable about and committed to breastfeeding, although there is some discrepancy in advice given, which causes confusion to the mothers. Different attitudes of midwives who have or have not breastfed their own children are discussed. Implications of the findings for practice are discussed and a number of recommendations given. (KL)

951031-008

Pediatrician involvement in breast-feeding promotion: a national study of residents and practitioners. Freed GL, Clark SJ, Lohr JA, et al (1995), Pediatrics vol 96, no 3, part 1, September 1995, pp 490-494

Objective: Physician support for breast-feeding mothers has been shown to improve breast-feeding rates, but no evaluation of the adequacy of physicians' breast-feeding-related training has been conducted. This study was designed to assess pediatricians' knowledge, attitudes, training, and activities related to breast-feeding promotion. Methods: Surveys were mailed to a national random sample of pediatric resident (n = 999) and practitioners (n = 610) who were board certified within the previous 3 to 5 years. Results: Response rates were 74% for residents and 69% for practitioners. Although more than 90% of respondents agreed that pediatricians should be should be involved in breast-feeding promotion, their clinical knowledge and experience did not suggest a high degree of competency. For example, practitioners were only slightly more aware of breast-feeding's protective effect against otitis media (71% vs 60%), and more than one quarter of both groups did not agree that exclusive breast-feeding is the most beneficial form of infant nutrition. Clinical advice often included inappropriate recommendations for breast-feeding termination or formula supplementation; only 64% of practitioners and 52% of residents knew that supplementing during the first few weeks of life may cause breast-feeding failure. For both groups, prior personal breast-feeding experience) i.e., respondent or spouse had breast-fed an infant or 3 or more weeks) was a major determinant of improved clinical knowledge, more frequent activity, and greater self-confidence and perceived effectiveness in the area of breast-feeding instruction provided during training was primarily in lecture format, with limited clinical opportunities to practice skills needed to assist breast-feeding mothers. Reflecting on their own training, more than 70% of

practitioners recommend that more time be devoted to direct patient interaction and practice of counselling and problem solving skills. Conclusions: These results indicate that residency training does not adequately prepare pediatricians for thier role in breast-feeding promotion. Improvements in residency training and innovative continuing education programs should be implemented to help pediatricians meet the needs of their breast-feeding patients. (Author).

951017-169

Valuing breastfeeding in midwifery education. Dykes F (1995), British Journal of Midwifery vol 3, no 10, October 1995, pp 544-547

Midwifery education departments need to examine the adequacy of their provision of lactation education in the light of increasing research evidence about the health benefits of breastfeeding and its growing international significance. A new breastfeeding course developed at the University of Central Lancashire is described. (Author)

951017-168

Breastfeeding workshops: a focus on knowledge, skills and attitudes. Long L (1995), British Journal of Midwifery vol 3, no 10, October 1995, pp 540-542, 544

The most recent OPCS Infant Feeding survey found that the percentage of women who give up breastfeeding during the early days is still high, and that their reasons for doing so have not changed since the first report. Breastfeeding Workshops were designed as an educational response to the findings. This article describes the creation of the workshops and discusses the potential differences that these workshops can make to midwives' clinical practice. (Author)

951017-167

Educating for successful breastfeeding. Jamieson L (1995), British Journal of Midwifery vol 3, no 10, October 1995, pp 535-536, 538-539

Midwives have a duty to explain the benefits of breastfeeding to women without bias or prejudice. This article describes how the use of a modified Peplau model can enhance the ability of both student and qualified midwives to communicate effectively with mothers who wish to breastfeed. (Author)

951017-117

The effects on professional practices of a three-day course on breastfeeding. Valdes V, Pugin E, Labbok MH, et al (1995), Journal of Human Lactation vol 11, no 3, September 1995, pp 185-190

This study assessed reported changes in clinical breastfeeding support practices following a three-day (approximately 24 hour) course. The course, presented at the Catholic University in Santiago, Chile, included the physiology of lactation and lactational infertility, related policy, clinical skills, the Lactational Amenorrhea Method (LAM), and program-related findings. A questionnaire was sent to all participants and an additional systematic sample was telephoned to assure a statistically valid sample. Sixty-nine percent of respondents reported changes in clinical practices resulting from attendance at the course. The results support the concept, now being advanced by the Baby-Friendly Hospital Initiative, that an 18-24 hour course can change clinical practices. (Author)

951007-006*

Invest in breast together. Kendall S (1995), London: Health Visitors Association and Royal College of Midwives 1995

A second edition of this was produced in 1998. Received for review.

950922-057

Knowledge and attitudes toward breast-feeding: differences among dietitians, nurses and physicians working with WIC clients. Bagwell JE, Kendrick OW, Stitt KR, et al (1993), Journal of the American Dietetic Association vol 93, no 7, July 1993, pp 801-804

We assessed the knowledge of and attitude towards breast-feeding of dietitians, nurses and physicians who work with individuals in the Alabama Special Supplemental Food Program for Women, Infants and Children. On a scale of 0 to 100, dietitians expressed stronger interest in lactation (78.6) and exhibited greater knowledge (79.6) of the questions asked than nurses (74.5 and 73.0 respectively). Attitude and knowledge scores of physicians (70.2 and 75.5, respectively) were not statistically different from those of dietitians or nurses. Respondents disagreed greatly about

the relationship of breast-feeding to weight loss and the appropriateness of oral contraceptives during breast-feeding 6 weeks postpartum. Professionals were more knowledgeable about benefits to infants than about maternal concerns. Results of this study suggest that professional breast-feeding education programs should address maternal concerns such as weight loss, contraception and mastitis as well as benefits to the infant. (Author)

950904-024

Nutrition. Information and attitudes among health personnel about early infant-feeding practices. (1995), Weekly Epidemiological Record vol 70, no 17, April 1995, pp 117-120

A survey was conducted among 282 health personnel attending seminars on breastfeeding in Luxembourg and in Amiens, France. Particiopants included physicians, nurses, midwives, nursery nurses, social workers, lactation counsellors, and hospital aides, dieticians and administrators to encourage them to consider their own attitudes to appropriate infant feeding practices for babies under four months of life. Respondents were asked to grade five liquids commonly given to babies - water, glucose solution, herbal tea, fruit juice and diluted cow's milk; and to rate infant formulae on a scale of 1 to 5, compared with breast milk as the 'gold standard' rating 5. The replies were compared with the WHO recommendations and formed the basis for discussions. (KL)

950705-018*

Breastfeeding matters to everyone: Department of Health invests for third year in promotion of breastfeeding. Department of Health (1995), London: Department of Health 22 May 1995. 2p

For the third year the Department of Health in conjunction with the National Breastfeeding Working Group, has produced thousands of posters, leaflets and other publicity materials for use, free of charge, by local groups to promote National Breastfeeding Awareness Week. The theme of this year's Week is `Breastfeeding Matters to Everyone' - and aims to focus on the support from family, friends and health professionals that is so important to the breastfeeding mother. Launching the week, Lady Cumberlege, Parliamentary Secretary at the Department of Health said: 'I am particularly pleased to announce at the beginning of National Breastfeeding Awareness Week that not only are we poviding £50,000 for the week itself, but another £30,000 to support new good practice guidance for the NHS and a further £50,000 towards a training package for health professionals. We are committed to promoting breastfeeding as there is no doubt at all of its benefits in prokviding for babies a perfectly balanced diet, less risk of infection and the closeness they thrive on. It is therefore unfortunate that very often a well meaning relative or friend suggests that a baby should be given a bottle to overcome feeding difficulties. This is not the best solution as it can add to the problem and undermine a mother's confidence in her ability to feed her baby. Family, friends and health professionals have a part to play in e3nsuring that a mother feels confident about breastfeeding, safe in the knowledge that she is doing the best she can by feeding her baby herself. All over the country, hundreds of local groups and individuals will be working hard to promote breastfeeding to pregnant women, new mothers and the general public. Events being held range from coffee mornings to stalls in shopping centres to sponsored events. We are grateful to all those who are giving both time an denergy to help make this week a success.' `Good practice Guidance to the NHS', prepared by the Department of Health in consultation with the National Breastfeeding Working Group, will be distributed during the week. Lady Cumberlege added: 'I am delighted that this important document is being distributed to the NHS during National Breastfeeding Awareness Week. Breastfeeding is the best start in life that a child can have, and the Guidance will help all those working in the NHS appreciate its importance and enable them to provide mothers with the support they need to breastfeed successfully for as long as they wish to do so.' The training package for health professionals - `Invest in Breast Together' - produced jointly by the Royal College of Midwives and the Health Visitor's Association and partly funded by the Department of Health, is also launched this week. (Full text. This item is reprinted here in full. There is therefore no need to order it from MIDIRS or from the publisher)

950627-039

Medical professionals' attitudes toward breastfeeding. Lazzaro E, Anderson J, Auld G (1995), Journal of Human Lactation vol 11, no 2, June 1995, pp 97-101

This study examined the attitudes toward breastfeeding of medical professionals working with pregnant or new mothers. Most advocated breastfeeding to mothers who had not made an infant feeding decision; fewer talked about breastfeeding during the first trimester; and many recommended that mothers supplement a breastfed infant with prepared commercial baby milk. All agreed that a mother's return to work led to early discontinuance of breastfeeding and that the family is a major influence on a mother's decision to breastfeed. To increase the prevalence of breastfeeding, the study group recommended prenatal education, participation in support groups, and promotion of

breastfeeding through the media. (Author)

950615-015

New breast-feeding training pack out. Taylor A (1995), Nursing Times vol 91, no 22, 31 May-6 June 1995, p 7

A new breastfeeding programme for midwives and health visitors, 'Invest in breast together' has been launched by the Royal College of Midwives and the Health Visitors Association to mark the beginning of National Breastfeeding Awareness Week. (KL)

950605-076

Investing in breastfeeding trainers. Kirk L (1995), Health Visitor vol 68, no 6, June 1995, p 252

The joint HVA/RCM 'Invest in breast together' initiative, launched last month, will help breastfeeding trainers improve their skills and knowledge. Liz Kirk reviews the learning pack materials, which she helped to pilot. (Author)

950530-044

Usefulness of a non-experimental study design in the evaluation of service developments for infant feeding in a general hospital. Bruce N, Griffioen A (1995), Social Science and Medicine vol 40, no 8, April 1995, pp 1109-1116

There are likely to be many situations in which it is not possible to use a randomized controlled trial (RCT) for the evaluation of local service developments, and the usefulness of non-experimental study designs need to be assessed. This is examined with reference to a study carried out to evaluate the appointment of a baby feeding adviser (BFA) and other policy changes for infant feeding at a district general hospital (DGH). Surveys of Maternity Unit staff attitudes and practices, and of mothers' experiences were carried out in 1988 (prior to the changes) and afterwards in 1990. Service changes were: appointment of a BFA, removal from the postnatal wards of dextrose, seminars on baby feeding for midwifery staff, and a reduction of night-only shifts. There was no change in the initial breast feeding rate of about 80%, but there was an increase in breast feeding at 6 weeks postnatally from 57% (95% CI; 51-64) to 64% (95% CI; 59-69); P=0.15. The percentage of women who stopped breast feeding by 6 weeks fell from 30% in 1988 to 22% in 1990; P=0.11. Mothers who did not see the BFA (1990 only) were significantly less likely to begin breast feeding (P=0.03), independent of social class and age, but a similar association was not seen at 6 weeks. There were significant reductions in the percentage of midwifery staff viewing feeding policy as unimportant (P=0.02), and in the use of supplements for breast-fed babies (P<0.001). Women having Caesarian sections were more likely to give up breast feeding in 1988 and in 1990, and this was partly explained by continued use of supplements. It is concluded that the service initiatives have been associated with some favourable changes in attitudes and practices of staff, and in the outcome for mothers and babies as measured by breast feeding at 6 weeks and satisfaction with advice. The limitations and value of the study design are discussed in the light of the results. While cause and effect will inevitably remain difficult to establish in a non-experimental situation, there are some characteristics of the study which aid interpretation. Of particular importance is the observation that some key social and service factor associations persisted after the intervention, thereby highlighting issues requiring continued attention. (Author)

950517-050*

Training health workers in breastfeeding management. Hormann E (1994), Penang, Malaysia: World Alliance for Breastfeeding Action (WABA) [1994?]. 4p

Abstract not available.

950403-116

Beliefs about breastfeeding: a statewide survey of health professionals. Barnett E, Sienkiewicz M, Roholt S (1995), Birth vol 22, no 1, March 1995, pp 15-20

A statewide project was implemented in 1993 to increase breastfeeding among low-income women in North Carolina through improved institutional policies and practices and professional lactation-management skills. A survey designed to ascertain professional beliefs about breastfeeding was mailed to 31 hospitals and 25 public health agencies. A total of 2209 health professionals completed the survey and met the study selection criteria. Nutritionists and pediatricians were most likely to have positive beliefs about breastfeeding, whereas hospital nurses were most likely to have negative beliefs. Personal breastfeeding experience contributed to positive beliefs. Professionals were least convinced of the emotional benefits of breastfeeding. Those with negative beliefs were most likely to advocate complete infant weaning from the breast before nine months of age. Although most health professionals had positive beliefs about breastfeeding, differences by profession, work environment, and personal breastfeeding experience

indicate the need for comprehensive training in lactation management, and improvements in hospital and public health clinic environments. (Author)

950329-011*

Breastfeeding counselling: a training course. (1994), Geneva: World Health Organization, Division of Diarrhoeal and Acute Respiratory Disease Control August 1994. 4p

Description of a training course for health workers including midwives, community and paediatric nurses, and doctors to develop counselling and clinical skills to support breastfeeding and to help mothers who experience difficulties. (KL)

950319-074

Impact and sustainability of a 'baby friendly' health education intervention at a district hospital in Bihar, India. Prasad B, Costello AMdeL (1995), BMJ vol 310, no 6980, 11 March 1995, pp 621-623

Objectives: To evaluate the impact and sustainability of a baby friendly training intervention for staff at an Indian district hospital on initiation of breast feeding and use of prelacteal feeds by mothers. Design: Intervention study with assessment by interviewing mothers. Subjects: 172 mothers recruited before the intervention, 195 recruited immediately after the intervention, and 101 recruited six months later. Setting: District hospital in a small town in Bihar, India. Main outcome measures: Age of infant when breast feeding started, use of prelacteal feeds, and colostrum feeding. Intervention: 10 day training programme for doctors, nurses, and midwives, explaining the benefits and feasibility of early breast feeding and dangers of prelacteal feeds together with instruction on explaining this information to mothers. Results: Breast feeding was started within 24 hours of birth by 53 (29%) of control mothers, 164 (84%) in the early follow up group, and 60 (59%) in the late follow up group. Prelacteal feeds were used by 165 (96%), 84 (43%), and 78 (77%) respectively. Only 36 mothers in the late follow up group reported receiving education on feeding. Mothers in this group who had received the education were significantly more likely than mothers who received no education to breast feed early (28 (78%) v 11 (17%), $P < 0.001$) and not use prelacteal feeds (21 (58%) v 2 (3%), $P < 0.001$). Conclusions: Training doctors and midwives greatly improves the feeding practices of mothers. However, the impact of the training fell off quickly and refresher training is needed to sustain the improvement. (Author)

950312-051

National assessment of physicians' breast-feeding knowledge, attitudes, training, and experience. Freed GL, Clark SJ, Sorenson J, et al (1995), JAMA (Journal of the American Medical Association) vol 273, no 6, 8 February 1995, pp 472-476

Objective: Previous reports have demonstrated that physician counseling can improve rates of breast-feeding initiation and duration but suggest that physicians are ill-prepared for this role. It is unclear whether residency training for pediatricians, obstetrician/gynecologists, and family physicians provides the knowledge and skills necessary for effective breast-feeding promotion. Design: Survey. Participants: A national random sample of 3115 residents and 1920 practicing physicians in pediatrics, obstetrics/gynecology, and family medicine. Outcomes: Assessment of breast -feeding knowledge, attitudes, training, and experience. Results: Overall response rate was 68%. All groups demonstrated significant deficits in knowledge of breast-feeding benefits and clinical management; for example, less than 50% of residents chose appropriate clinical management for a breast-fed jaundiced infant or a breast abscess. Practicing physicians performed slightly better, but still more than 30% chose incorrect advice for mothers with low milk supply. Residents reported that their breast -feeding instruction consisted mainly of didactic lecture, not patient experience. Only 55% of senior residents recalled even one instance of precepting related to breast-feeding, and less than 20% had demonstrated breast-feeding techniques at least five times during residency. Regarding preparation for breast-feeding counseling, more than 50% of all practicing physicians rated their residency training as inadequate. Overall, physician involvement in breast-feeding promotion was endorsed by 90% of respondents, yet only half rated themselves as effective in counseling breast-feeding patients. The greatest predictor of physician self-confidence was previous personal or spousal breast-feeding experience. Conclusions: In this national sample of residents and practicing physicians in three specialities, physicians were ill-prepared to counsel breast-feeding mothers. Deliberate efforts must be made to incorporate clinically based breast-feeding training into residency programs and continuing education workshops to better prepare physicians for their role in breast-feeding promotion. (Author)

950301-056

Training health care workers to counsel breastfeeding mothers. Savage F, Daelmans B (1994), Dialogue on Diarrhoea no 59, December 1994-February 1995, p 2

Felicity Savage and Bernadette Daelmans describe a new WHO training course. (Author)

950201-054

Development of an infant feeding policy in Southern Derbyshire. Evans S (1995), Health Visitor vol 68, no 2, February 1995, pp 59-60

Southern Derbyshire health authority and Derbyshire FHSA have set local targets for increasing breastfeeding rates and reducing tooth decay in children. Sue Evans describes an initiative to improve local breastfeeding rates by helping all health professionals working within the district to give the same clear and correct advice to parents. (Author)

950102-084

Recognizing staff knowledge and skills during world breastfeeding week. Shrago LC (1994), Journal of Human Lactation vol 10, no 4, December 1994, p 265

No abstract available.

941018-081

Improving skills to support breast-feeding. Gold M (1994), The Female Patient vol 19, no 9, September 1994, pp 35-48

Although breast-feeding is considered the best way to feed an infant, many physicians have had no training in helping women to nurse their babies. Knowing the proper technique and potential problems enables the physician to promote breast-feeding through practical advice and to address the patient's concerns knowledgeably. (Author)

940615-002

Investing in breast together. (1994), Health Visitor vol 67, no 6, June 1994, p 184

Short report of two 'information gathering' days for figures in breastfeeding promotion and training held at the HVA and Royal College of Midwives headquarters in London last month organised for the 'Invest in breast together' initiative. The Health Visitors Association and the Royal College of Midwives are jointly working on a 'training the trainers' pack which will be sold to health authorities to help promote and support breastfeeding initiatives in midwifery and health visiting units. (Author, edited)

940509-010

Health visitors' perceptions of breastfeeding mothers. Dracup C, Sanderson E (1994), Health Visitor vol 67, no 5, May 1994, pp 158-160

A study to assess health visitors' perceptions of pregnant women most likely to breastfeed revealed that many did not recognise the significance of all factors identified in previous research as indicating a negative attitude. Christopher Dracup and Elizabeth Sanderson discuss the application of these factors in identifying mothers for breastfeeding promotion. (Author)

940509-002

`Invest in breast' call. (1993), Health Visitor vol 66, no 12, December 1993, p 429

The HVA is to launch a major national campaign to promote flagging breastfeeding rates. The campaign, planned jointly with the Royal College of Midwives (RCM), will aim to boost training for primary health care professionals working with parents and children. (Author)

940505-020

Breastfeeding - midwives' personal experiences. McMulkin S, Malone R (1994), Modern Midwife vol 4, no 5, May 1994, pp 10-12

You might expect that midwives would breastfeed their own babies more successfully than the mothers in their care, but as Sally McMulkin and Rosaleen Malone found, it's not always easy to practise what you preach. (Author)

940504-088

'Successful breastfeeding' - what success?. McCormick C (1994), Midwives Chronicle vol 107, no 1276, May 1994, p 168

A plea from the senior midwifery adviser at the Royal College of Midwives (RCM) for all midwives to encourage breastfeeding as advocated in the RCM book 'Successful breastfeeding'. (KL)

940427-033

Getting it together. Jamieson L (1994), Nursing Times vol 90, no 17, 27 April 1994, pp 68-69

Midwives and mothers are participating in breast-feeding workshops where a research-based approach aims to show how best professionals can pass on their expertise. (Author)

940201-043

Breastfeeding: research and quality assurance issues. Parker C (1994), British Journal of Midwifery vol 2, no 2, February 1994, pp 56-60.

The importance of breastfeeding and the midwife's role in promoting, supporting and encouraging it are established, yet there is still a shortfall in the Government's breastfeeding targets. Are midwives accountable for this, and, if so, what should they be doing about it? This article shows that despite the availability of research-based guidelines for midwives there remains a theory-practice gap. (Author)

940123-049*

The health visitor's perception of the breast feeding mother. Final report 1991. Sanderson E (1991), Newcastle upon Tyne: University of Northumbria at Newcastle, Faculty of Social Sciences, Institute of Health Sciences 1991. 66p

Health visitors' perceptions of the breast feeding mother were explored in an experimental study to determine if stereotyping occurred. Fifty-three health visitors from one health authority participated in the study when they received questionnaires which were distributed randomly with information about either a breast-feeding or bottle feeding mother. Each subject received a written description of a mother and was then asked to complete a series of Likert type scales according to the perceived likelihood of a breast feeding or bottle feeding mother having certain characteristics. The health visitors perceived the breast feeding mother as being 'older' than the bottle feeding mother and being less likely to be anxious or to prefer a regular routine. Characteristics such as social class, housing, education, and a supportive partner were not found to be significant. Differences in perceptions of breast feeding and bottle feeding mothers are described and the implications of findings discussed. (Author)

940117-057

Knowledge of basic infant nutrition amongst community health professionals. Hyde L (1994), Maternal and Child Health Journal vol 19, no 1, January 1994, pp 27-32

A confidential questionnaire survey of 200 community health professionals in South Derbyshire showed variations and gaps in knowledge of infant feeding. 17 per cent of all respondents were still in favour of complimentary bottle feeding in the establishment of breastfeeding, 30 per cent of respondents felt infant formulae milks to be just as good as breast milk. Whilst 20 per cent did not realise many breast-feeding mothers have given up by six weeks. Questions on contents of milks caused difficulty. 42 per cent of respondents did not recognise goats milk as unsuitable in young babies. Only 37 per cent knew iron deficiency was common, 41 per cent felt fruit juices to be an essential source of vitamin C. Health visitors felt food additives to be a common cause of hyperactivity in young children. General practitioners don't routinely recommend vitamins and are unsure about when to given semi-skimmed milks. Clinical medical officers feel test weighing breast fed babies useful, unlike the other groups. Only 47 per cent knew the fluoride level in the area they worked and 21 per cent when fluoride might be recommended. This survey suggests that parents of young children would be unlikely to receive the same good, clear advice on infant feeding from all the community health professionals they meet and further training and initiatives, for example guidelines are needed to improve this situation. (Author)

940106-012

The contribution of professional support, information and consistent correct advice to successful breast feeding. Rajan L (1993), Midwifery vol 9, no 4, December 1993, pp 197-209

This paper presents qualitative and quantitative data on experiences of breast feeding in hospital from a national survey of pain relief in labour. Successful breast feeding was found to be significantly associated with satisfaction with medical care, help given with feeding by hospital staff, and the wish to have a subsequent baby in the same hospital. Information and support from staff were frequently mentioned as factors contributing to success. Lack of such help, receiving inaccurate or conflicting advice, and unsolicited and unwanted offers of artificial milk were major sources of discontent. Practical support would be improved by the provision of rooms furnished with nursing chairs where women could breast feed in comfort, benefiting from the companionship and experience of other women and the

support of breast feeding counsellors. Efforts should be made to combat the problem of conflicting advice by ensuring that ward staff are conversant with up-to-date knowledge of best practices. (Author)

940105-007

Scots fail on breast-feeding. (1993), Nursing Times vol 89, no 50, 15 December 1993, p 5

Nurses, midwives and health visitors in Scotland are failing to give sufficient emphasis to breast-feeding, according to a new report. (LJS)

931201-007

Attitudes to breastfeeding: the role of the midwife. Wright J (1993), Modern Midwife vol 3, no 1, January/February 1993, pp 27-28

Can midwives make or break a woman's resolve to breastfeed? (Author)

931106-003

Breast feeding and continuity of care. Seaborne R (1993), Professional Care of Mother and Child vol 3, no 7, July/August 1993, pp 199-200

Too many midwives giving conflicting advice may make mothers abandon breastfeeding early on. (Author)

931102-053

Breastfeeding care in Ohio hospitals: a gap between research and practice. Freeman CK, Lowe NK (1993), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 22, no 5, September/October 1993, pp 447-454

Objective: To assess current breastfeeding care in Ohio hospitals and compare that care to research-based principles. Design: Survey. Setting: Ohio hospitals that provide maternity care. Participants: All 141 Ohio hospitals that provide maternity care were invited to participate. One-hundred sixteen (83%) hospitals returned usable surveys completed by obstetric nurse managers. Main Outcome Measure: A 38-item questionnaire provided data on hospital demographics and information regarding the care of breastfeeding mother-infant dyads. Results: Research-based practices common in Ohio's hospitals include demand feeding, breastfeeding education, and breastfeeding as the initial neonatal feeding. Common non-research-based practices include supplemental fluid administration, postpartum nipple treatments, mandatory initial nursery stays, limited sucking time, restricted maternal-infant contact, distribution of formula packs, minimal follow-up care, and the suspension of breastfeeding for hyperbilirubinemia. Conclusions: Despite positive changes in perinatal care, a number of non-research-based practices persist in Ohio hospitals for the care of the breastfeeding mother-infant dyad. (Author)

930518-065

'Who helps health professionals with breast-feeding?'. Palmer G (1993), Midwives Chronicle vol 106, no 1264, May 1993, pp 147-156

No abstract available.

930508-052

Breastfeeding promotion in Kenya: changes in health worker knowledge, attitudes and practices, 1982-89. Bradley JE, Meme J (1992), Journal of Tropical Pediatrics vol 38, no 5, October 1992, pp 228-234

In 1982, a study of health worker knowledge, attitudes and practices with respect to breastfeeding was undertaken in Kenya. A breastfeeding promotion campaign ensued, in which training of health workers was a major component. In 1989, the impact of this campaign was evaluated through a survey examining changes in health worker knowledge, attitudes and practices. The survey showed that considerable improvements in knowledge and substantial improvements in hospital practices have occurred, although none of these could be attributed to any single element of the breastfeeding promotion programme. Particularly undesirable practices which were common in 1982, such as separation of mother and baby, formula feeding and use of bottles have virtually disappeared from Kenyan hospitals. Recommendations regarding future programme directions are made. (Author)

930504-003

Breast-feeding. Time to teach what we preach. Freed GL (1993), JAMA (Journal of the American Medical Association) vol 269, no 2, 13 January 1993, pp 243-245

No abstract available.

921117-006*

Breastfeeding workshops: a focus on knowledge, skills and attitudes. Jamieson L (1992), London: Lea Jamieson and Louise Long [1992]. 6p

No abstract available.

921108-045

Nurses' knowledge of breastfeeding in a clinical setting. Lewinski CA (1992), Journal of Human Lactation vol 8, no 3, September 1992, pp 143-148

Most obstetrical nurses subscribe to the 'breast is best' theory. This project examined the current knowledge base of a sample of nurses and their practices relating to breastfeeding in three clinical settings. These study findings reveal that many nurses need to update their knowledge of those practices found to encourage successful breastfeeding. Only seven of 16 questions were answered correctly by more than 50 percent of the nurses surveyed. Areas of adequate knowledge included positioning, breastfeeding frequency, infant suckling patterns, and the importance of night feedings. Areas of inadequate knowledge included timing of the baby at the breast, milk production, use of glucose water, and the use of nipple shields. (Author)

921108-044

Breastfeeding knowledge of hospital staff in rural maternity units in Ireland. Becker GE (1992), Journal of Human Lactation vol 8, no 3, September 1992, pp 137-142

Knowledge of breastfeeding is necessary for health workers to adequately assist breastfeeding mothers. This paper examines the level of knowledge concerning breastfeeding in three rural maternity units in Ireland. Health workers responding to a self-report questionnaire felt that they had adequate knowledge, but their answers to the questions did not always bear this out. Health workers felt more staff training in breastfeeding would help to improve breastfeeding rates. Thirty-four percent of respondents had never attended continuing education on infant feeding topics. Manufacturers of artificial infant formula were the main source of continuing education information. The knowledge level of obstetricians did not appear to affect breastfeeding rates. Pediatricians' breastfeeding knowledge was good, but they had little input in the care of healthy babies. Rising breastfeeding rates were found in the unit where midwives were more recently qualified and had higher knowledge scores. The need exists for more breastfeeding education in all the units examined, ideally provided by a staff member with current lactation training. (Author)

920814-012

Health service support of breast feeding - are we practising what we preach?. Beeken S, Waterston T (1992), BMJ vol 305, no 6848, 1 August 1992, pp 285-287

Objective: To ascertain the attitudes of health professionals and breast feeding mothers to breast feeding and their views on current practice. Design: Questionnaire to all midwives and health visitors and to breast feeding mothers in Newcastle upon Tyne. Setting: Maternity units and community in Newcastle upon Tyne. Subjects: 127 hospital midwives, 23 community midwives, 63 health visitors, and 50 first time breast feeding mothers. Results: Optimum practice guidelines were not followed. 30 (60%) mothers said they were separated from their babies on the first night after birth. 82 (42%) professionals said that breast fed babies were frequently given water to drink. 28 (56%) babies in the mothers survey had received food or water other than breast milk; 19 of these had been given water. Professionals expressed mainly positive attitudes towards breast feeding in general but less positive attitudes to specific issues such as the beneficial effects on child health and the value of voluntary organisations in breast feeding promotion and management. Conclusions: Although many health workers are in favour of breast feeding there is conflict among the professions working most closely with breast feeding mothers. Good breast feeding support requires closer attention to monitoring hospital practices and continued training on good lactation management. (Author)

920728-013

Setting a standard: the challenge for health visiting. Cowpe M, Maclachlan A, Baxter E (1992), Health Visitor vol 65, no 7, July 1992, pp 225-227

Health visitors agree that breast is best. But how far is this principle translated into practice? Copious evidence exists

of conflicting advice and views on breastfeeding among health professionals and even between health visitors themselves. Marianne Cowpe, Anne Maclachlan and Elizabeth Baxter describe how north east Fife health visitors drew up an agreed standard of practice to boost local breastfeeding rates. (Author)

920701-093

Breast feeding knowledge and skills shared in a midwife mother partnership. Jamieson L (1990), In: A midwife's gift: love, skill, and knowledge. Proceedings of the International Confederation of Midwives 22nd International Congress, October 7-12, 1990, Kobe, Japan. Tokyo: International Confederation of Midwives 1990, pp 196-197

No abstract available.

920320-067

Breastfeeding promotion in Honduras - The PROALMA project. (1987), Mothers and Children vol 6, no 1, 1987, pp 1-4

The PROALMA (Proyecto de Apoyo a la Lactancia Materna) project was begun in 1982 in a pilot scheme and subsequently extended to cover the whole country. It's main aim was to change hospital policies and procedures surrounding breastfeeding and educate health professionals to help change their attitudes. (LJS)

920317-070

Breast feeding - a midwife's view. Fisher C (1981), Journal of Maternal and Child Health February 1981, pp 52-57

The responsibility for the initiation of lactation belongs to the midwifery profession, yet the needs of the mothers and their babies are not always being met. Unfortunately, many midwives have been denied the opportunity to learn the necessary skills because they trained during a period when bottle feeding was the norm and successful breast feeding was a rarity. This article is based on many years experience and may help to fill the gap, so that the precious early days of feeding can be enjoyable and satisfactory for both mother and baby. (Author)

920306-055

Training health professionals about breastfeeding - The San Diego Lactation Programme. Naylor A, Wester R (1986), Nursing Journal of India vol LXXVII, no 7, July 1986, pp 178-179

No abstract available.

920213-042

More effective education for breastfeeding women. Hewat RJ (1985), Canadian Nurse January 1985, pp 38-40

We all know that breastfeeding has many advantages over formula for most women and their babies, yet we have difficulty converting this knowledge to practice. More consistency in care and more knowledge among nurses may be the answer. (Author)

920114-003

Variations in breast feeding advice, a telephone survey of community midwives and health visitors. Chalmers JWT (1991), Midwifery vol 7, no 4, December 1991, pp 162-166

Purpose: To ascertain what advice was given by community midwives and health visitors to breastfeeding mothers in the home. Type of study and setting: Telephone survey. Edinburgh. Methodology: Numbers: A convenience sample of 9 community midwives and 31 health visitors. Assessment 14 questions were asked in a 3 minute telephone conversation. Results: Significantly different advice was given by the midwives and health visitors on the subjects of nipple cleaning, length of feeding time, and advice for mastitis. All, or all but one of the midwives, gave the correct advice on these items. Much of the advice given by health visitors was seriously flawed, eg 11 (of the 31) would recommend that babies receive glucose drinks until breast milk is established and 15 would advise a women with mastitis to stop breastfeeding on the affected side. Most midwives gave responses consistent with the advice given in the Royal College of Midwives' handbook Successful Breastfeeding. The majority of practitioners in both groups recognised the need for all those involved in breastfeeding to work together to avoid giving conflicting advice. Abstract writer's comments: This is a small but useful survey which could be repeated in most areas at very little cost. Although the article provides no new information on breastfeeding, it does demonstrate that those professionals who did not read current literature give advice that is out of date. This is a message for any area of practice, not just breastfeeding. The authors conclude that there is a need for lay groups and health professionals to pool resources and produce uniform advice for breastfeeding mothers in a guidance document which they felt they `owned' and would

therefore be more likely to heed. (Jane McIntyre Hall for MIDIRS)

911126-043

Hospital and other influences on the uptake and maintenance of breast feeding: the development of infant feeding policy in a district. Bruce NG, Khan Z, Olsen NDL (1991), Public Health vol 105, no 5, September 1991, pp 357-368

The aim of this study was to identify local obstacles to successful breastfeeding. It was carried out at a District General Hospital in 1988. Information was gathered from two sources, 1) 60 hospital and community based midwives; 2) 250 mothers during their hospital stay, then at 6 weeks by postal questionnaire. The response rate was 220, non responders were excluded. Results: 31% of staff felt there was not enough time to discuss feeding. This was most strongly reported by staff working on the labour ward and in the Special Care Baby Unit. Staff were divided on whether there should be an infant feeding policy. 61% felt the policy should be neutral. Concerns were expressed that active promotion of breastfeeding would cause feelings of guilt in mothers who chose not to or could not breastfeed. Of the 165 babies who began to breastfeed, 92.7% received at least one supplement of sterile water, dextrose or milk formula. 60% of babies were breastfed on labour ward whilst for 40% there was a delay before the first feed was given. 57% of mothers reported the advice they received was mostly or partly conflicting. The report also charts the local factors which influenced breastfeeding at both 2 days and 6 weeks. These included, social class, religion, mode of delivery, planned duration of breastfeeding, time of first feed and attendance at antenatal classes. From a breastfeeding start rate of 82% almost 30% of mothers had either partly or completely given up by 6 weeks. Discussion: Policy on infant feeding in the unit has been re-written in light of the findings of this study. The Baby Feeding Advisor has held in-service training sessions on breastfeeding, and dextrose is no longer available on the postnatal wards. A follow-up study is to be undertaken. Abstract writer's comments: This paper shows how personal opinions and preferences can influence and disrupt research-based practice. It also demonstrates the value of local studies (as stated in the paper) which provide a focus for local action. The practice and advice of all professionals who are in contact with the mother, not just the midwives, must be consistent. (Jill McIntyre Hall for MIDIRS)

910704-018

Breastfeeding promotion: training of mid-level and outreach health workers. Armstrong HC (1990), International Journal of Gynecology & Obstetrics vol 31, supplement 1, 1990, pp 91-103

The International Baby Food Action Network Africa Regional Office (IBFAN Africa) has given thirteen courses in lactation management to subSaharan health workers. The aims of training, the process of running national courses in collaboration with local organizers, and the content of one- to two- week courses are described. Available teaching resources include books, abstracts, films and slide sets. Forty topics are suggested for mid-level training, with a sample exercise teaching observation of a breastfeed. A two-week course leads participants through four stages of attitude change. Obstacles to training are listed and solutions recommended. [Paper presented at the Interagency Workshop on Health Care Practices Related to Breastfeeding] (Author)

910624-046

Where the breastfeeding message is getting through it is despite health educators. (1987), Nursing Times vol 83, no 5, 11 February 1987, p 3

According to a recent report from the London Food Commission, the longer a woman stays in hospital the more likely she is to give up breastfeeding. Midwives must be convinced that breastfeeding is best if they are to encourage women to breastfeed and continue breastfeeding. (SJH)

910510-020*

Lactation management training. World Health Organization (1991), Copenhagen, Denmark: World Health Organization Regional Office for Europe 1991, 26p

One reason for the decline of breastfeeding is that health professionals have not received adequate training in practical aspects of lactation management. Recommendations are given. (MIDIRS)

910403-014

Nurses' knowledge of breastfeeding. Anderson E, Geden E (1991), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 20, no 1, January 1991, pp 58-65

The purpose of this study was to survey nurses' knowledge of breastfeeding and to assess whether nurses' education, clinical experience, or personal experience predicted their knowledge. Results suggest that nurses have limited

knowledge of breastfeeding, although no variable consistently predicted breastfeeding knowledge. Clinical experience produced the most consistent results, implying that leadership, variety in maternal and newborn nursing experiences, and years of experience result in nurses having more knowledge about breastfeeding. (Author)

901011-010

Attitudes to breast feeding. Kurtz D (1981), Midwife, Health Visitor and Community Nurse vol 17, no 10, October 1981, pp 418, 420-421

Staff attitudes may explain why more positive encouragement is not given to mothers to breast fed. (Author)

900823-025

How did we go wrong with breastfeeding?. Fisher C (1985), Midwifery vol 1, no 1, Spring 1985, pp 48-51

This paper examines the history of breast feeding. By reviewing some of the old Obstetric, Paediatric and Midwifery textbooks the author discovered how some of the incorrect advice on breast feeding originated. (Author)

900823-020

Do we believe `breast is best'?. Thomson A (1986), Midwifery vol 2, no 2, June 1986, pp 63-64

Does womens' failure to breastfeed reflect on the attitudes and lack of knowledge of midwives and health visitors? (RKG)

900725-004*

Helping a mother to breastfeed - no finer investment. Royal College of Midwives in association with Healthcare Productions (1990), London: Healthcare Productions 1990. VHS video. Running time 20 minutes

Do you remember your first day on the postnatal ward? 'Nurse, go and help Mrs Bloggs with breastfeeding' 'Yes Sister'. Fine - help with breastfeeding - but what do I actually do? That's what this video is all about and I suppose, on one level, it does it rather well. No frills, no superfluous stuff about bras and buttons and lotions and potions - just hands-on, Readers Digest Manual instruction on 'How to help with breastfeeding'. Quite sensibly, breastfeeding is stripped to the essentials of 'a correct latch-on' and 'positioning' and these elements are dealt with in detail. We are taken step by frustrating step through an assisted feed and treated to all the technical advantages of full-colour, slow-motion repeats and freeze-frame close-ups. At times it all gets rather complicated - especially with all those hands; 'This hand [baby's] tuck around you...this hand [baby again] out of the way...my hand [midwife] with thumb underneath...'. I suppose the mother's got in SOMEWHERE - certainly by the end, I had to sit on my own hands to stop them getting in too... It is all very clear, very professional and the midwife is kind and competent, but for me the video was spoiled right at the beginning when the (albeit pleasant) voice-over informed us that 'a mother's breastfeeding success depends on...YOUR [the midwife's] knowledge, training, attitudes and skills'. And that is what is so very sad about it all; breastfeeding - the closeness, the cuddles, the sheer simplicity - now yet another Midwifery Procedure done by midwives to mothers ('the midwife...made my breast into a shape that we could get into the baby's mouth'...'I couldn't have done it myself'). And doubly sad because mothers seem to need this help because society today ensures that young women are more adept at handling portable phones than babies - and sad because we midwives seem to find it nigh impossible to simply sit quietly and passively. Certainly this video fulfils a need (witness our present failure rate) but it also perpetuates one - a need for instruction in the absence of living example. Dora Henschel, the midwife, actually makes this vital observation - although it's nearly lost in the editing. Do you recall that delightful passage in Gabrielle Palmer's 'Politics of breastfeeding'* in which a researcher in Papua New Guinea asks native women how they learned to breastfeed and her audience falls about laughing? Well imagine their response to this video! Rather embarrassing, isn't it? * The politics of breastfeeding. Gabrielle Palmer. London: Pandora Press, 1988, p 41. (Reviewed for MIDIRS by Hannah Hulme)

900705-008

Breastfeeding fallacies: their relationship to understanding lactation. Auerbach KG (1990), Birth vol 17, no 1, March 1990, pp 44-49

When inaccurate information is the basis for clinical decision making, patient care is likely to be incomplete, inappropriate, and potentially harmful. We identified 17 fallacies that relate to lactation and breastfeeding that exist in the professional and lay literature and that continue to be perpetuated among care providers and shared with new mothers. The inappropriateness and inaccuracy of these beliefs, and how they influence attitudes about, and practices relating to, breastfeeding, are discussed. Alternatives to these fallacies exist, and their use may contribute to more

relevant care and advice giving, and to successful breastfeeding. (Author)

900306-018

Playing the same tune. Spiro A (1987), Community Outlook March 1987, pp 18-19

Consistent advice and support from health visitors and community midwives is essential if mothers are to enjoy successful breastfeeding. (Author)

900115-020

Why wrong for so long?. Fisher C (1990), Midwives Chronicle vol 103, no 1224, January 1990, pp 13-14, 16

Old midwifery textbooks written by doctors give advice on breastfeeding which conflicts with modern-day thinking. This may have affected midwives' attitudes towards the promotion of breastfeeding. (RKG)

890908-049

Breast-feeding and health professionals: a study in hospitals in Indonesia. Hull VJ, Thapa S, Wiknjosastro G (1989), Social Science and Medicine vol 28, no 4, 1989, pp 355-364

This paper presents findings on knowledge, attitudes, and practices regarding breast-feeding management in the modern health sector in Indonesia. The methodology applied was a survey which was carried out in teaching hospitals in major cities throughout Indonesia. The results showed that although the perinatal health care providers' attitudes toward breast-feeding were very positive, there were many areas in which knowledge was incomplete and in which wide variation existed or incorrect advice given to breast- feeding mothers. The content of advice on breast-feeding was not always sound. Many thought that a wide range of illnesses were a contraindication to breast-feeding, nearly one in five thought that breast-feeding should follow a fixed schedule rather than the baby's needs, and only 54% thought that breast-feeding should be initiated immediately after delivery. Most of the providers did not seem to have the knowledge to cope with the common problem of insufficient breast-milk supply syndrome. Similarly, although support for the concept of rooming-in was strong, about one-third of respondents did not think the mother and infant should be together for the full 24 hr implied by true rooming-in. Fears about the possibility of increased risk of infection with rooming-in were expressed These and other misconceptions about rooming-in imply that a consistent, well-designed training program needs to be carried out in the modern health sector which will provide the necessary information to health care providers about this important aspect of early infant care. (Author)

890816-014

GP trainees' awareness of breastfeeding. Richards S (1989), New Generation vol 8, no 1, March 1989, p 36

A new venture was launched last October with the first BPG study day on this subject. (Author)

890814-012

Breast feeding policies in practice - 'no wonder they get confused'. Garforth S, Garcia J (1989), Midwifery vol 5, no 2, June 1989, pp 75-83

This paper presents the information collected from a study of midwifery care in English health districts. The study had two stages. The first was a questionnaire sent to Directors of Midwifery Services in all the English health districts carried out in mid 1984 and achieved a response rate of 93% (180 out of 193 of health districts). The second part of the study examined aspects of policy and practice in eight of the health districts, undertaken in 1985. The study concentrated on events between delivery and transfer to the postnatal ward. The midwife responsible for the care and the women concerned (78 in all) was interviewed. The study looked at contact between the mother and baby in the delivery room and found that in 98% of units the mother was able to hold the baby at once or as soon as she wanted to, if all was well. 'In 69% of the consultant units, women could put the baby to the breast immediately.' 'The time from birth to the first feed was measured. In 43 deliveries where the woman chose to breast feed the average time was 98 minutes with a range of one minute (at the mothers instigation) to 12 hours. In 10 instances (23%) the first feed occurred more than two hours post partum.' The study observed who instigated the first feed to determine whether midwives were encouraging early feeding; in only 14 cases was it a midwife who suggested a feed. The national survey observed feeding schedules and found 97% of consultant units stated 'demand' feeding as their policy. However, the interpretation of demand feeding throughout the units was variable. The questions relating to 'rooming in' were asked in the national survey. In 59% (113/119) of units, babies were 'roomed in' with their mothers all the time. 16% of units had a policy of 'rooming in' during the day only and 25% (48/191) had some other policy which included- 'rooming in' by day and the mother's choice at night; babies taken to the nursery for the first one or

two nights routinely; or phototherapy needed to be done in the nursery. Only 30% (65/220) of units used no additional fluids for breast-fed infants. 25% (56/220) gave water if it was needed, 7% (15/220) gave water routinely and 38% (84/220) of units used other fluids such as glucose and/or artificial milk. 'Findings indicate that many current practices are not consistent with the available research evidence and may actively hinder the establishment of successful breast feeding.' MIDIRS Comments: This is an excellent paper. It emphasises that conflicting advice is a major problem and so the advice given should adhere to the unit policy. It follows that policies and the latest research must be frequently reviewed. The paper exposes deficiencies within current midwifery practices and highlights variability between policies in different health districts. It is hoped that the current Royal College of Midwives handbook 'Successful breastfeeding' and the Department of Health and Social Security 'Present day practice in infant feeding: third report' will encourage greater consistency. Every midwife should read the original article. References: Department of Health and Social Security. Present day practice in infant feeding: third report. London: HMSO, 1988. Royal College of Midwives. Successful breastfeeding. A practical guide for midwives (and others supporting breastfeeding mothers). London: RCM, 1988. (MIDIRS)

890809-005

Practices and policies in the initiation of breastfeeding. Renfrew-Houston MJ, Field PA (1988), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 17, no 6, November/December 1988, pp 418-424

Despite increasing knowledge about factors affecting the initiation of breastfeeding, many mothers still encounter problems and discontinue breastfeeding earlier than desired. Many hospitals still have not implemented the practices that are known to be helpful in the establishment of breastfeeding. As a result, a study was conducted to examine the policies and practices affecting breastfeeding in hospitals in Alberta, Canada. A questionnaire-based survey of all Alberta hospitals (including directors of nursing and staff nurses) found that many practices were still relatively inflexible; did not always reflect accurate, research-based information; and were not geared to the needs of mothers and infants. The implications of these findings are discussed. (Author)

890118-120

Difficulties with breastfeeding: midwives in disarray?. Inch S (1987), Journal of the Royal Society of Medicine vol 80, January 1987, pp 53-58

This is the meeting report of the eleventh meeting of the forum on Maternity and the Newborn. Major areas discussed: Variations in practice, in attitude, in treatments for engorgement, in treatments for nipple trauma; attempts to prevent nipple trauma; dangers of limiting feed times; technique; implications of interventions; restriction of hindmilk intake and discussion. (AB)

880930-002

Formula feeds. Hill S (1988), Midwives Chronicle vol 101, no 1207, August 1988, p 256

It is not surprising that some mothers fail to breastfeed when many midwives are not themselves convinced that breast is best. (SJH)

880908-032

Breast versus bottle: an inhouse debate. (1988), Midwife, Health Visitor and Community Nurse vol 24, no 7, July 1988, pp 254-255

A debate between professionals who disagree on the fundamental issue of whether breastmilk is better for babies than formula milks. (RKG)

880718-033

Overcoming obstacles to breast-feeding in a large municipal hospital: applications of lessons learned. Winikoff B, Myers D, Laukaran VH (1987), Pediatrics vol 80, no 3, September 1987, pp 423-433

A project to overcome institutional constraints to breast-feeding was implemented in a large municipal hospital. Interventions included staff education, intensive training of a team of physicians and nurses, development of user-tested educational materials, and day and evening staffing by a breast-feeding counselor. A nearby hospital served as a control. Project evaluation entailed chart reviews at the intervention site and a control hospital (n=812); interviews with mothers during their postpartum hospital stay and at return clinic visits (n=180); and field observations in all areas of the hospital that provided prenatal, intrapartum, postpartum, and pediatric care. Comparisons of the incidence and pattern of breast-feeding increased from 15% to 56%, and exclusive breast-feeding

for more than 3/4 of feedings increased from 0% to 15%. At the control site, the respective changes were from 28% to 41% and from 5% to 7%. Formula use by breast-feeding women decreased but was nonetheless extensive, and the usual reason given by breast-feeding women for supplementation was a perceived insufficiency of breast milk. This may be due, in part, to the fact that bedside assistance to breast-feeding mothers was not integrated into the routine care provided by staff nurses but was relegated to the lactation nurse/counselors who were not available at all times. It is concluded that the process to overcome institutional constraints to breast-feeding is difficult but feasible. Repeated and extensive professional education helps create the context whereby clinical and administrative staff can reassess routines and policies. (Author)

880627-003

Educating GPs about breastfeeding. Henry B (1988), New Generation vol 7, no 2, June 1988, p 37

Barbara Henry, BPG chairman, describes the progress made so far with BPG's scheme for breastfeeding education for GPs. (Author)

880128-007

[Midwives understanding of breastfeeding]. Inch S (1987), Midwife, Health Visitor and Community Nurse vol 23, no 12, December 1987, p 542

The author responds to comments by Janus [Midwife, Health Visitor and Community Nurse, vol 23, no 7, July 1987] on the meeting of the Forum on Maternity and the Newborn at the Royal Society of Medicine in December 1986 [reported in the Journal of the Royal Society of Medicine, vol 80, 1987, 53-57, and reprinted in MIDIRS Information Pack no 5, August 1987]. She defends randomised controlled trials as an effective way to assess interventions such as those commonly advocated for sore nipples. When midwives base their practice on research evidence then mothers will receive consistent advice. (SJH)

2026-08413

Effectiveness of breastfeeding educational interventions to improve breastfeeding knowledge, attitudes, and skills among nursing, midwifery, and medical students: A systematic review and meta-analysis. Sandhi A, Nguyen CTT, Lin-Lewry M, et al (2023), Nurse Education Today vol 126, July 2023, 105813

Background
Breastfeeding education programs are necessary to prepare healthcare students to address the breastfeeding needs of families. Various breastfeeding educational modules have been used in academic settings; however, the effectiveness of breastfeeding educational interventions remains unclear.
Objectives
To examine the effectiveness of educational interventions to improve the breastfeeding knowledge, attitudes, and skills of nursing, midwifery, and medical students.
Methods
A systematic review was conducted searching academic databases from inception to December 22, 2022. Searches were carried out by two authors independently in PubMed, MEDLINE, Web of Science, Scopus, CINAHL Plus, Embase, Cochrane Library, and ERIC. Joanna Briggs Institute critical appraisal checklist was used. The data were extracted for a random-effects meta-analysis to estimate the standardized mean differences (SMDs) with 95 % confidence interval (CI). Subgroup analyses were performed to identify potential moderators.
Results
Thirty-three quasi-experimental studies (12 two-group studies and 21 one-group studies), which included 1313 nursing students, 204 midwifery students, and 1066 medical students, were identified. The students who received educational interventions had significantly higher scores in breastfeeding knowledge (SMD: 0.67, 95 % CI: 0.46, 0.87 for two-group studies; SMD: 1.42, 95 % CI: 0.91, 1.94 for one-group studies), more positive attitudes toward breastfeeding (SMD: 0.43, 95 % CI: 0.22, 0.63 for two-group studies; SMD: 0.98, 95 % CI: 0.32, 1.63 for one-group studies), and higher scores for breastfeeding skills (SMD: 1.52, 95 % CI: 0.46, 2.58 for two-group studies; SMD: 1.33, 95 % CI: 0.43, 2.23 for one-group studies) than the control groups. As a teaching method, clinical practicums were a significant moderator of both breastfeeding knowledge ($p = .035$) and skills ($p < .001$). Few studies ($n = 5$) described the educational framework underpinning the program development.
Conclusions
Breastfeeding educational interventions effectively improve the breastfeeding knowledge, attitudes, and skills of undergraduate nursing, midwifery, and medical students. Incorporating clinical practicums in interventions is important. Future studies to examine useful teaching strategies for enhancing learning outcomes are warranted.

2026-08152

Building breastfeeding knowledgeable health systems: Focus groups with physician leaders. Hall MM, Patterson JA, MacMillan Uribe AL, et al (2026), PLoS ONE vol 21, no 5, May 2026, e0350146

Despite the growth of breastfeeding and lactation medicine as a specialty, the care of breastfeeding families is compromised because few standards and recommendations exist for its practice and integration into health systems. We conducted a qualitative study involving three focus groups (N = 13) with breastfeeding and lactation medicine physician leaders who currently work within large health systems across the United States. Our study aimed to gather the perspectives of physician leaders regarding breastfeeding care in health systems, to summarize current practices and recommendations for optimal care, and to explore barriers and facilitators to the implementation of these recommendations. A deductive content analysis approach guided by the Exploration, Preparation, Implementation, and Sustainment Framework was used to analyze the transcripts. Resulting themes revealed the important role that health systems play in modeling breastfeeding supportive practices and the strong influences of leadership and staff personal breastfeeding experiences on health system policies. Recommendations included the creation of breastfeeding and lactation medicine divisions, adequate staff education, staffing and coordination of lactation care across the system and community, support for lactating employees, and public awareness of resources and programs. Barriers to implementation included siloing of lactation services by department, lack of breastfeeding-supportive workplaces, deficient clinical billing for lactation services, and low prioritization by training programs. Facilitators included multidisciplinary collaborations, employee supportive lactation policies, appropriate dyadic lactation billing, and electronic health record workflows. Our focus groups revealed many barriers to the delivery of optimal breastfeeding care within health systems, but strategies were identified for systemic changes. Next steps include identification of breastfeeding and lactation medicine divisions and health systems already implementing the best practices described here. Further research should engage additional stakeholders to better understand administrative and financial points of view regarding barriers and facilitators of breastfeeding support.

Full URL: https://doi.org/10.1371/journal.pone.0350146

2026-06961

Breastfeeding Competence in Primary Care (BF-CPC): Turkish Validity and Reliability. Duman R, Aktas Reyhan F, Uncu B (2026), Journal of Human Lactation vol 42, no 2, May 2026, pp 365-374

Background:
In Türkiye, healthcare providers are required to assess the competence of primary care workers in breastfeeding to improve practices and patient outcomes. However, a valid and reliable tool for evaluating breastfeeding competence in Turkish healthcare settings is lacking.
Research Aim:
The aim of this study was to translate the Breastfeeding Competence in Primary Care from Catalan into Turkish and to assess the reliability and validity of the Turkish version of Breastfeeding Competence in Primary Care.
Method:
A methodological study testing the Turkish validity and reliability of the Breastfeeding Competence in Primary Care scale with 362 healthcare professionals working in primary health care settings. Language adaptation of the scale was achieved using the forward–backward translation method. Content, face, and construct validity were used for validity analysis; item analysis, Cronbach's alpha, and test–retest correlation were used for reliability analysis.
Results:
Content Validity Index was 0.82. As a result of factor analysis, four items were removed and a single-factor structure explaining 55.34% of the total variance was obtained. Confirmatory factor analysis indicated mixed model fit ($\chi 2/df = 5.683$; GFI = 0.769; AGFI = 0.703; CFI = 0.941; RMR = 0.082; NFI = 0.929; TLI = 0.931; IFI = 0.941; RMSEA = 0.114), as the RMSEA value indicated poor fit despite acceptable values for several other indices. Cronbach's alpha value was 0.95 and the test–retest correlation coefficient was $r = 0.79$; $p < 0.001$.
Conclusion:
The results of this study show that the Turkish version of the Breastfeeding Competence in Primary Care is valid and reliable. It can be said that the scale can be used to evaluate the knowledge and competencies of health professionals in primary care about breastfeeding. (© The Author(s) 2026.)

2026-06715

'I won't have another baby after breastfeeding trauma'. Blunt R (2026), BBC News 15 June 2026

New mothers have shared their traumatic experiences of breastfeeding, saying there is a lack of support in the

postnatal period. (© 2026 BBC)
Full URL: https://www.bbc.co.uk/news/articles/cy02yq2erejo

2026-06100

Educational Priorities for Breastfeeding Support Across Career Stages: A Survey of Brazilian Pediatricians and Residents. Silva MC, Gouvêa LC, Wilbert DD, et al (2026), Breastfeeding Medicine 28 May 2026, online

Background:
Pediatricians play a central role in breastfeeding support, yet educational gaps persist in training programs worldwide. Understanding how educational priorities vary across career stages may help optimize breastfeeding education for health care professionals.
Objective:
This study aimed to identify distinct professional profiles among physicians providing pediatric care attending the Brazilian Congress of Pediatrics and to characterize their self-reported educational priorities regarding breastfeeding in order to inform continuing education initiatives tailored to the needs of different professional profiles.
Methods:
A cross-sectional electronic survey was conducted during the 41st Brazilian Congress of Pediatrics (Florianópolis, Brazil; October 2024). Participants included 290 physicians providing pediatric care—board-certified pediatricians (n = 164), pediatric residents (n = 109), and physicians without pediatric specialty certification providing pediatric care (n = 17). Fourteen binary variables representing clinical practice context and perceived causes of early weaning were used for cluster analysis. Educational priorities were assessed through classification of open-ended responses into thematic categories.
Results:
Three distinct clusters were identified, forming a career-stage gradient. Cluster 1 (n = 111, 38.3%) comprised predominantly early career professionals (mean age, 31.7 years; 64.9% residents) who prioritized technique/management. Cluster 2 (n = 44, 15.2%) showed intermediate characteristics, with emphasis on mother/family education and support network. Cluster 3 (n = 135, 46.6%) included mostly senior pediatricians (mean age, 44.7 years; 77.8% board-certified) who prioritized legislation/work, myths/misinformation, and the pediatrician's role. This gradient emerged despite demographic variables being excluded from the clustering algorithm.
Conclusions:
Three distinct professional profiles with differing educational priorities were identified. Educational needs followed a career-stage gradient, ranging from practical clinical skills among early-career professionals to leadership, coordination, and policy competencies among senior pediatricians. The emphasis on the pediatrician's role among senior professionals underscores a perceived need to reassert the pediatrician as the central coordinator of the breastfeeding support team. These findings support the development of career-stage-tailored educational strategies to maximize the relevance and effectiveness of continuing education initiatives. (© The Author(s).)

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2026-05022

Practices and social representations of traditional midwives in the promotion of breastfeeding in Yucatán during the COVID-19 pandemic. Castillo-Miñaca ME, Morales-Domínguez M, Bonvecchio-Arenas A (2026), International Breastfeeding Journal vol 21, no 1, 21 February 2026, 38

Objective
Analyze practices and social representations (P&SR) of traditional midwives (TM) in the promotion of breastfeeding (BF) in the COVID- 19 context, in the Mexican state of Yucatán.

Materials and methods
This exploratory qualitative study was based on eighteen semi-structured interviews with twenty-four TM from Yucatán. In most cases, interviews were conducted individually, although in some instances two midwives participated together, and in one case three midwives were interviewed simultaneously. A phenomenological approach guided the discourse analysis.

Results
Midwives recognize their key role during the pandemic and the lack of recognition of their work received from health institutions. They are key in maternal care during pregnancy and childbirth as well as in relation to BF. However, they still hold P&SR regarding milk (avoiding cold, herbal or alcohol chest rubs, massages), transmission of diseases through BF (uncertainty about whether the SARS-CoV-2 virus is transmitted through breast milk), duration of BF (three

to twelve months), and about formula feeding, which they often associated with disadvantages such as poorer nutrition, illness in infants, and loss of the maternal bond, potentially acting as barriers or facilitators for BF.

Conclusion
The COVID-19 pandemic increased the attention provided by TM in BF related matters, it is necessary to reinforce and demystify their knowledge to enhance BF promotion and make them allies alongside healthcare professionals in this subject. (© 2026, The Author(s))

Full URL: https://doi.org/10.1186/s13006-026-00823-y

2026-03137

Breastfeeding? Babies can do it in their sleep!. Colson J, Colson S (2025), AIMS Journal vol 37, no 3, September 2025

Joelle and Suzanne Colson explain how babies may benefit from feeding while still asleep. (© AIMS 2025)

Full URL: https://www.aims.org.uk/journal/item/babies-breastfeed-asleep

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2026-03135

Poor breastfeeding education for UK healthcare professionals: a huge gap in the provision of early breastfeeding support for new mothers. Moggridge L (2025), AIMS Journal vol 37, no 3, September 2025

Independent midwife and lactation consultant Lucy Moggridge explains just how little training midwives receive in breastfeeding. (© AIMS 2025)

Full URL: https://www.aims.org.uk/journal/item/midwives-breastfeeding-education

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2026-02738

Is breastfeeding education in midwifery programs sufficient to equip future midwives? Phase 1: A curriculum mapping study. Pangerl S, Ross-Adjie G, Geraghty S, et al (2026), Midwifery vol 154, March 2026, 104707

Problem/Background/Aims
Extensive global research confirms the wide-ranging health and psychological benefits of exclusive breastfeeding for both infants and mothers, yet global breastfeeding rates remain low. This paper reports Phase 1 findings from a multiphase national breastfeeding study. The aim is to explore where midwives and midwifery students acquire their breastfeeding knowledge, to better understand contributing factors to inconsistent advice provided to breastfeeding mothers, an issue associated with early breastfeeding cessation.
Design
A quantitative descriptive design was used to map the timing and frequency of breastfeeding related content in Australian midwifery curricula, specifically in relation to the national midwifery accreditation standards.
Results
Curricular mapping across 14 universities revealed considerable variation, which included inconsistencies in prioritising specific breastfeeding standards, lack of early and consistent exposure of breastfeeding and lactation content as well as implementation gaps.
Conclusion
Findings support the need for nationally consistent, evidence-based midwifery curricula to reduce variability in breastfeeding education and the support provided to mothers. Although accreditation standards require the inclusion of breastfeeding and lactation content in midwifery curricula, implementation remains inconsistent. Addressing these gaps through standardised competencies and ongoing curriculum evaluation would better prepare midwives to deliver breastfeeding support and reduce conflicting advice for families. (© 2026 The Author(s). Published by Elsevier Ltd.)

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2026-02736

What factors influence the knowledge and attitudes of UK university students towards breastfeeding?. Malekian M, Irving M, Hundley VA, et al (2026), Midwifery vol 154, March 2026, 104706

Background Breastfeeding provides substantial benefits for individuals, families, and society, yet rates in the UK remain lower than in comparable countries. Early knowledge and attitudes, formed before pregnancy and breastfeeding experiences, strongly influence future feeding practices. As future parents and societal influencers, university students are a key population for fostering informed attitudes and understanding of breastfeeding.
Aim This study assessed breastfeeding knowledge and attitudes among university students, comparing health and non-health disciplines, and exploring associated factors.

Methods A cross-sectional survey of 114 students at a UK university was conducted using an online self-administered questionnaire. Convenience sampling recruited participants across health and non-health disciplines. Data were analysed descriptively and inferentially, with regression analyses identifying predictors of knowledge and attitudes.
Results Intention to breastfeed was high in both groups. However, students overall had neutral attitudes, and knowledge was at the threshold between low and high. Health students showed significantly greater knowledge and more positive attitudes than non-health students ($p < 0.001$). Regression analyses indicated that prior breastfeeding education and field of study were the strongest predictors of knowledge and attitudes, while male gender and urban residence were linked to slightly lower knowledge.
Discussion Despite high intentions, overall knowledge and attitudes were limited. Findings suggest targeted interventions emphasising breastfeeding education and exposure could improve knowledge and attitudes, supporting informed and confident breastfeeding practices.
Conclusion Universities are strategic settings for interventions to enhance breastfeeding knowledge and attitudes in advance of personal experience. Public health strategies should also address social, cultural, and community factors to foster supportive breastfeeding environments. (© 2026 The Author(s). Published by Elsevier Ltd.)

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2026-02492

NICU nurses' knowledge, attitudes, practices, and influencing factors regarding breastfeeding of newborns: a scoping review. Peng H, Li X, Guo X, et al (2026), International Breastfeeding Journal vol 21, no 1, 3 January 2026, 14

Background
Improved survival rates of high-risk neonates have been accompanied by persistent challenges in breastfeeding support within Neonatal Intensive Care Unit settings. While the World Health Organization strongly advocates for breastfeeding, global breastfeeding rates in NICUs remains suboptimal. NICU nurses play a key role in breastfeeding support, yet their knowledge, attitudes, and practices (KAP) remain systematically underexplored. This study aims to assess NICU nurses' current levels of breastfeeding-related KAP and explore influencing factors, thereby identifying key intervention areas and providing evidence for targeted interventions and training programs.

Methods
This scoping review followed the Arksey and O'Malley framework and systematically searched Medline (Ovid), Embase (Ovid), Web of Science, Scopus, and CINAHL for studies published up to 6 April 2025. Studies were screened using predefined inclusion and exclusion criteria. Data were extracted and synthesized, focusing on NICU nurses' breastfeeding-related knowledge, attitudes, practices, and influencing factors.

Results
Fourteen studies across nine countries were ultimately included. NICU nurses generally acknowledged the benefits of breastfeeding and maintained positive attitudes, particularly those who had received breastfeeding training. However, their professional knowledge was notably insufficient, particularly regarding lactation physiology and contraindications to breastfeeding. Consequently, positive attitudes did not consistently translate into standardized clinical practice, with notable variability in implementation and heavy reliance on personal experience. These knowledge-attitude-practice gaps were influenced by multiple factors operating at individual, institutional, and family levels. Furthermore, the assessment of KAP revealed significant methodological challenges, as the included studies used highly heterogeneous assessment tools, often self-designed or adapted, highlighting a lack of standardized KAP instruments tailored to NICU settings.

Conclusions
This review reveals a critical knowledge-attitude-practice gap in NICU breastfeeding support. While nurses' attitudes are positive, their knowledge is deficient and practices inconsistent, a discordance driven by individual, institutional, and methodological challenges. Bridging this gap requires a multi-pronged strategy focused on competency-based training, supportive policies, and the development of validated, NICU-specific assessment tools. (© 2026, The Author(s))

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2026-02488

Mapping lactation education in health care curricula in Belgium: a quantitative observational study. Permentier H, Reyskens J, Eerdekens A (2025), International Breastfeeding Journal vol 21, no 1, 27 December 2025, 11

Background

Breastfeeding is widely acknowledged as essential for infant health and maternal well-being. Yet, breastfeeding rates in Belgium remain below global targets. In Flanders, only 36.4% of infants receive any breastfeeding at six months, and national figures remain unavailable. Professional support is vital to initiate and sustain breastfeeding, and this depends on adequate, multidisciplinary education for healthcare providers. The extent to which lactation is integrated into Belgian health-related higher education curricula is unclear. This study explores current practices and identifies areas for improvement while positioning findings within a broader international context.

Methods
A quantitative observational study was conducted in January – March 2025 using a structured questionnaire developed in Dutch, French, and German. The survey targeted curricula in nursing, midwifery, and allied health professions across 29 Belgian higher education institutions. A total of 124 program coordinators were contacted. The study assessed the presence, structure, and depth of lactation education.

Results
Among contacted programs, 45 responded (36%) and 29 fully completed the questionnaire (64% of respondents). Lactation education duration varied from 30 min to 40 h. Less than half of the programs addressed internationally recognized frameworks such as the Baby-Friendly Hospital Initiative or Mother-Friendly care. Respondents consistently identified midwives as essential breastfeeding experts, while other professions were less emphasized—despite broad agreement on the need for interdisciplinary approaches.

Conclusions
Lactation education across Belgian health care curricula is fragmented and varies greatly in scope and quality. The absence of unified standards risks inconsistent breastfeeding support and undermines efforts to promote optimal infant feeding practices. These findings reflect a wider international challenge. As breastfeeding remains a global public health priority, establishing coherent, evidence-based educational frameworks across disciplines and borders is critical. This study adds to the international dialogue by identifying systemic gaps and reinforcing the importance of collaboration in strengthening professional training related to lactation. (© 2025, The Author(s))

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2026-01517

Breastfeeding Attitudes and Their Associated Factors Among Chinese Nursing Undergraduates: A Cross-Sectional Study. Liu H, Xia Y, Deng Y, et al (2025), Nutrients vol 17, no 19, October 2025, 3169

Background: Breastfeeding promotion is a public health priority in China, yet the exclusive breastfeeding rate remains below national targets. Nursing students, as future key promoters, often report insufficient knowledge, but their attitudes are less clear.

Objective: This study aimed to assess breastfeeding attitudes and identify their associated factors among Chinese nursing undergraduates, thereby providing an evidence base for the design of effective educational interventions. Design, Setting and Participants: A cross-sectional study was conducted from October 2024 to January 2025 at a medical university in Anhui Province, China, with 753 nursing students participating.

Methods: The participants completed the General Information Questionnaire, the Chinese version of the Comprehensive Breastfeeding Knowledge Scale (CBKS), and the Iowa Infant Feeding Attitude Scale (IIFAS). We analyzed the data via Spearman correlation, univariate analysis, and multiple linear regression. Results: The overall IIFAS score for nursing students was 54 (51, 59), with attitude scores showing a significant positive correlation with knowledge ($r = 0.462$, $p < 0.001$). Multiple linear regression revealed that breastfeeding attitudes were significantly predicted by CBKS score ($\beta = 2.975$), grade ($\beta = 2.887$), major ($\beta = 3.235$), and breastfeeding intention ($\beta = 8.089$, all $p < 0.001$), as well as by feeding type before six months ($\beta = -1.591$, $p = 0.020$). The overall model accounted for 32.7% of the variance ($R2 = 0.327$, $F = 51.666$, $p < 0.001$).

Conclusions: This study demonstrates that Chinese nursing undergraduates hold predominantly neutral attitudes toward breastfeeding. These attitudes show significant associations with their knowledge level and personal feeding intention, which underscores the necessity of integrating attitude-focused education into nursing curricula.

Keywords: breastfeeding; nursing undergraduates; knowledge; attitude; associated factors

Full URL: https://doi.org/10.3390/nu17193169

2026-00447

Interprofessional undergraduate breastfeeding education: a scoping review. Lehane E, Fleming A, Hanley E, et al (2025), International Breastfeeding Journal vol 20, no 1, 23 December 2025, 91

Background
Breastfeeding care and support from healthcare professionals are essential for breastfeeding success. To provide consistent, evidence-based care, healthcare professionals require comprehensive breastfeeding education. However, it is unclear as to how breastfeeding curricula integrate interprofessional education (IPE) across undergraduate health programmes. This scoping review examines and summarises interprofessional breastfeeding curricula designed for undergraduate or pre-registration health students.

Methods
The inclusion criteria for this review are: studies that report on undergraduate breastfeeding curricula that have an IPE component. Guided by the Joanna Briggs Institute scoping review framework, five databases (Medline (Ovid), CINAHL (EBSCO), ERIC (EBSCO), Social Sciences and Cochrane Databases of Systematic Reviews) and three grey literature sources (Google scholar, BASE and NICE website) were searched in September 2024, supplemented by grey literature searches and reference list screening.

Results
Of 1,263 identified articles, 927 underwent title and abstract screening, 46 full texts were assessed, and 14 met inclusion criteria. Data were extracted and presented using tables, figures, and narrative synthesis. Findings indicate that while breastfeeding education was delivered to multiple student groups, interprofessional engagement was limited, and IPE competencies were not consistently embedded. Learning was primarily uniprofessional, with students learning with, but not from and about each other. Assessment strategies were rarely reported, and while knowledge, confidence, and attitudes were measured, long-term behavioral change (e.g. improved breastfeeding rates over time) was not evaluated. Faculty and students acknowledged IPE's potential benefits, yet challenges such as logistical barriers and limited faculty training persisted.

Conclusions
Strengthening IPE integration, faculty development, and structured competency assessment could enhance interprofessional breastfeeding education. This is not only an educational reform but a strategic response to the public health barrier of inconsistent breastfeeding advice. Taking an interprofessional approach to breastfeeding education offers a progressive path to harmonize clinical messaging, improve continuity of care, and build trust between families and healthcare providers. (© 2025, The Author(s))

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2025-15306

Breastfeeding Knowledge, Attitudes, and Perceptions of Breastfeeding Education Among Undergraduate Nursing Students in China: A Cross-Sectional Study. Yang Y, Liu H, Yang J, et al (2025), The Journal of Perinatal Education vol 34, no 3-4, November 2025, pp 222-232

Nurses with baccalaureate degrees are becoming the mainstay of China's nursing workforce and are an important force in supporting breastfeeding. This descriptive cross-sectional study aims to explore the breastfeeding knowledge and attitudes of undergraduate nursing students in China, as well as their perceptions of breastfeeding education. An online questionnaire survey was conducted among 428 undergraduate nursing students from 22 medical universities/colleges in China. The questionnaire was designed by the research team based on the results of literature reviews and the Guideline for Infant and Young Child Feeding and Nutrition. Most student participants (96.96%) expressed supportive attitudes toward breastfeeding. The average correct response rate on the breastfeeding knowledge questionnaire was low (54.80%). Of the students, 92.99% requested more breastfeeding education in the nursing school curriculum. This indicates that breastfeeding education included in the undergraduate nursing curriculum should be strengthened to adequately prepare students to support breastfeeding. (© 2025 Springer Publishing Company)

2025-13651

Cross-cultural adaptation and validation of the "AprendeLact" questionnaire to Portuguese. Martín-Vázquez C, Cervera-Gasch A, Moreira RMDS, et al (2025), Midwifery vol 150, November 2025, 104621

Abstract

Background

Breast milk is the optimal nourishment a mother can provide for her child. Although many mothers aspire to breastfeed, such efforts necessitate support and guidance from qualified healthcare professionals.

Aim

Translation and Cross-Cultural Adaptation of the "AprendeLact" Questionnaire on Breastfeeding Knowledge into Portuguese

Methods

A cross-sectional validation study involving translation, content validity, test-retest reliability, and internal consistency was conducted. Descriptive and bivariate analyses were performed on sociodemographic variables and questionnaire outcomes. Fifty-seven undergraduate nursing and postgraduate maternal and obstetric health students from the Coimbra School of Nursing were randomly selected through cluster sampling.

Findings

The results demonstrated high internal consistency (Kuder–Richardson formula 20 [KR-20] = 0.87) and excellent test-retest reliability (intraclass correlation coefficient [ICC] = 0.899). The average score achieved was 12.246 ± 5.23 points. The highest-scoring item was number 6, related to "colostrum," while the lowest-scoring item was number 5, which assessed the "utility of the e-lactancia website."

Conclusions

The "AprendeLact" questionnaire was cross-culturally adapted and validated into Portuguese for undergraduate nursing and postgraduate maternal and obstetric health students. Findings revealed limited breastfeeding knowledge among the students, particularly regarding practical aspects. Factors associated with higher levels of knowledge included being female, being in the final years of a bachelor's degree, participating in clinical placements related to breastfeeding, attending training activities, engaging in breastfeeding support groups, or having been breastfed as a child. (© 2025 The Author(s). Published by Elsevier Ltd.)

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2025-13564

Socio-Cultural Barriers and Facilitators for Breastfeeding: A Qualitative Study of Parents and Healthcare Providers in a Small Canadian City. Skerry L, Hanson N, Nesbitt M, et al (2026), JOGC [Journal of Obstetrics and Gynaecology Canada] Vol 48, no 4, April 2026, 103119

Background

Despite efforts to protect, promote and support breastfeeding, breastfeeding duration and exclusivity rates remain inadequate within Canada and worldwide. A New Brunswick (Canada) hospital observed declining rates of exclusive breastfeeding 2014/2015 to 2020/2021 that were both the lowest in NB and below national averages. Thus, within the catchment area of this NB hospital, a targeted constructivist qualitative approach was used to shed light on these low levels of breastfeeding by examining both parents' and healthcare providers' (HCPs) perceptions of breastfeeding barriers and facilitators during the pre- and post-natal periods.

Methods

Semi-structured interviews were conducted with parents (N = 16) and HCPs working in family medicine or within maternal health (N = 13) in 2022 during the COVID-19 pandemic. Iterative reflexive thematic analysis was performed.

Results

Many themes discussing barriers and facilitators to breastfeeding were documented, with a particular focus on social and cultural influences. Both parent and HCP groups predominantly discussed the need for further education on breastfeeding; the parents focused on the education that they wanted for themselves, and HCPs felt that education was needed for both parents and HCPs.

Conclusions

Education on infant feeding is strongly needed for parents, HCPs, as well as the entire population in general. Education should be appropriately tailored to individuals' respective educational and cultural needs to move the needle forward on social and cultural acceptance and normalization of breastfeeding. Increased support throughout the breastfeeding journey, whereby a patient-centred approach is used, and available resources are made known, is also essential. (© 2025 The Society of Obstetricians and Gynaecologists of Canada/La Société des obstétriciens et gynécologues du Canada. Published by Elsevier Inc.)

2025-12256

Statewide Breastfeeding Education Program Improves Maternity Staff Knowledge, Attitudes and Self-Efficacy. Amick S, Savage J, Brewer M, et al (2016), Journal of Community & Public Health Nursing vol 2, no 4, 2016, 139

Louisiana breastfeeding rates are among the lowest in the United States with associated infant mortality and morbidity rates among the highest. To increase maternity nursing staff breastfeeding knowledge and to improve attitudes and self-efficacy towards evidence-based promotion of breastfeeding, a six contact-hour program promoting the state's breastfeeding initiative, The Gift, was presented in 35 maternity hospital programs from 2008 to 2012 with 1086 participants. Mean post-test scores increased by an average of 25% ($p<0.01$), a strongly significant knowledge increase. Post-program evaluation analysis indicated increased confidence, as well as improved attitudes and self-efficacy of participants to implement evidence-based maternity care practices on which the state breastfeeding initiative and the global Baby-Friendly Hospital Initiatives are based. Programs, such as state's maternity staff education program are effective in increasing breastfeeding knowledge, a critical component in increasing breastfeeding rates for improved outcomes for women and infants. (© 2016 Amick S, et al)

Full URL: https://doi.org/10.4172/2471-9846.1000139

2025-10361

Midwives' knowledge and diagnostic practices for mastitis and breast cancer in breastfeeding women in Japan: A cross-sectional study. Kanazawa Y (2025), European Journal of Midwifery vol 9, August 2025, p 38

Introduction:
Japanese midwives support lactating women to continue breastfeeding. However, midwives often learn breast care methods through practical experience. This study investigated how midwives acquire knowledge about mastitis and breast cancer.

Methods:
This cross-sectional study was conducted in Japan over two months. The study participants were midwives with breast care experience. The questionnaire was sent to 800 midwifery facilities for recruitment. The questions covered learning and diagnostic methods for general breast care, bacterial mastitis, severe mastitis, and breast cancer during lactation. The analysis method involved descriptive statistics. An Ethical Review Committee approved this study.

Results:
The survey return rate was 27.50% (n=200). The valid response rate was 87.27% (n=192). Although the learning method that helped midwives most regarding mastitis, in general, was breast care experience (38.0%), knowledge about bacterial mastitis and severe mastitis came from advice from doctors or senior midwives (33.3%, 42.4%). However, knowledge about breast cancer during lactation was mostly learned during formal education (29.5%); many had never learned about it (10.5%). The most common method used by midwives to make breast care decisions was subjective judgment.

Conclusions:
Most midwives learned a great deal by observing and palpating actual breasts in clinical settings. Some midwives had learned very little about breast cancer. Most midwives did not use medical equipment for breast evaluations. This suggests that Japanese midwives have high breast care skills. However, there is room for improving midwives' skills in using medical equipment. (© Author(s))

Full URL: https://doi.org/10.18332/ejm/209494

2025-09687

Current Breastfeeding Attitudes, Knowledge and Confidence of Obstetricians and Gynaecologists in Australia and New Zealand. Cher G, Bond DM, Nassar N, et al (2026), Australian and New Zealand Journal of Obstetrics and Gynaecology (ANZJOG) vol 66, no 2, April 2026, e70055

Background
There are limited data on what obstetricians and gynaecologists (O&G) know and think about supporting breastfeeding women.

Aims
To investigate breastfeeding attitudes, knowledge and confidence of Australian and New Zealand O&G specialists and trainees in educating, assessing and managing breastfeeding women.

Materials and Methods
An online REDCap survey was distributed via email in February 2023 to fellows and trainees of the Royal Australian New Zealand College of Obstetricians and Gynaecologists (RANZCOG). The survey included questions on demographic characteristics, knowledge, attitudes and confidence about breastfeeding.

Results
Of 312 (11%) respondents, 63% were > 40 years old, 78% female and two-thirds had personally breastfed. Half had no formal breastfeeding education. Mean score related to attitude was 4.8/7 (71.1%) with higher scores associated with extra training (β = 0.44 (95% CI 0.04, 0.84)) and personal breastfeeding (β = 0.37 (95% CI 0.15, 0.60)). Mean correctly answered knowledge score was 9/12 (75%). After adjusting for covariates, the main factors associated with higher knowledge were personal breastfeeding (β = 0.45 (95% CI 0.21, 0.69)) and being female (β = 0.58 (95% CI 0.10, 1.07)). Overall mean confidence score was 4.8/7 (68.6%); however, only 37% felt confident in managing breastfeeding challenges, and 60% would value more breastfeeding education. Factors associated with increased confidence included personal breastfeeding (β = 0.52 (95% CI 0.31, 0.73)), increased age (β = 0.39 (95% CI 0.64, 0.71)), and extra training (β = 0.84 (95% CI 0.46, 1.21)).

Conclusions
Confidence about breastfeeding in RANZCOG specialists and trainees was low. The majority of respondents wanted more formal and improved breastfeeding education and training. Breastfeeding educational resources and ongoing training should be developed for O&G trainees and specialists. ()

Full URL: https://doi.org/10.1111/ajo.70055

2025-09543

Physicians not in direct contact with breastfeeding: knowledge of the compatibility with diseases and the most prescribed drugs in their specialty. Tamarit CC, Carallo AC, Vicente AR (2025), International Breastfeeding Journal vol 20, no 1, 26 July 2025, 57

Background
The lack of breastfeeding training among physicians who indirectly attend to mothers providing this type of feeding to their babies could lead to its inadequate suspension. There are no impactful scientific publications addressing knowledge about breastfeeding among medical professionals who are not usually in contact with it, such as surgeons, nephrologists, internists, or cardiologists. The aim of this study is to evaluate the knowledge of physicians who are not directly involved in breastfeeding regarding its compatibility with drugs or diseases and related issues, as well as the available resources to consult its compatibility. The study also aims to analyze whether knowledge varies according to the center Baby Friendly Hospital Initiative (BFHI) accreditation, specialty (medical/surgical/medical-surgical), and job position (resident/attending).

Methods
This was a multicenter and cross-sectional observational study conducted in Spain, between October 2023 and February 2024. All physicians from hospitals or health centers in the country were included, resulting in 418 surveys. The questions were grouped into blocks: the first block included demographic data; the second block included general knowledge about breastfeeding; the third block included compatibility with diseases and drugs; and the fourth block included resources for consultation.

Results
Although 87% (365/418) of the physicians treated women who were breastfeeding at least once a year, they reported having limited training in breastfeeding, especially basic issues, and compatibility with drugs. In cases of doubt, 57% (238/418) reported seeking a reliable source. BFHI accreditation, specialty, or job position had little influence on the results. Nevertheless, we observed a higher percentage of correct responses in BFHI paediatric care centers and hospitals.

Conclusions
The results of this study highlight the lack of training in breastfeeding issues among professionals who are not in direct contact with breastfeeding women. This knowledge gap is particularly evident in basic questions about

breastfeeding and its compatibility with various medications. This emphasizes the importance of investing in breastfeeding promotion and education across all clinical settings, not only among paediatricians or obstetricians, but throughout the entire healthcare system. Encouraging a multidisciplinary approach can significantly improve support for breastfeeding women and ultimately benefit maternal and infant health outcomes. (© 2025, The Author(s))

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2025-09059

Breastfeeding Knowledge and Associated Factors Among Nursing Students in China: A Nationwide Cross-Sectional Study.

Chen M, Zhao J, Lu F, et al (2025), Journal of Human Lactation vol 41, no 3, August 2025, pp 345–358

Background:
Nurses' breastfeeding knowledge plays a significant role in promoting breastfeeding. Assessing nursing students' breastfeeding knowledge is crucial to devise effective educational strategies.
Research Aims:
To assess breastfeeding knowledge among nursing students in mainland China and identify the factors associated with it.
Methods:
A cross-sectional study was conducted to investigate the status of breastfeeding knowledge and its associated factors among Chinese nursing students (N = 1606). Data were collected through a network survey platform (WJX), utilizing a researcher-designed questionnaire and the Nursing Student's Knowledge about Breastfeeding Questionnaire. The associated factors were analyzed using independent sample t tests, one-way ANOVA, Pearson correlations, and multiple linear regression analyses.
Results:
The mean score for breastfeeding knowledge was 52.37 (SD = 27.39) out of 100. Passing is considered > 60. The breastfeeding knowledge score was higher in participants in their 3rd ($\beta = 0.11$, $p < 0.001$) and 4th year of study ($\beta = 0.08$, $p = 0.006$), and when participants reported deep breastfeeding-related learning ($\beta = 0.21$, $p < 0.001$). Lower knowledge levels were associated with incomplete breastfeeding related courses ($\beta = -0.11$, $p < 0.001$), no reported exposure to seeing breastfeeding ($\beta = -0.08$, $p = 0.001$), low confidence in effectively supporting breastfeeding ($\beta = -0.11$, $p < 0.001$), and a lack of enthusiasm for the profession of nursing ($\beta = -0.06$, $p = 0.018$).
Conclusion:
This study suggests there is a need to adopt a more comprehensive approach to breastfeeding education in order to enhance nursing students' breastfeeding knowledge. This could improve what they can offer in practical experience towards supporting breastfeeding. (© The Author(s) 2025.)

2025-08903

Providing Education About Skin-To-Skin Contact Significantly Increased Duration of Skin-To-Skin Contact for Newborns.

Wickström M, Oras P, Lundgren M, et al (2025), Acta Paediatrica vol 114, no 12, December 2025, pp 3152-3158

Aim
Skin-to-skin contact postpartum has many well-documented benefits, but there is a lack of evidence on effective strategies to enhance the practices and on the duration of skin-to-skin contact beyond the first hour postpartum. This study aimed to determine if an educational breastfeeding programme for healthcare professionals and parents could increase skin-to-skin contact duration in newborns.

Methods
A quasi-experimental design with baseline and intervention measurements was used in two clinics. Newborns between 37 + 0 and 42 + 0 weeks gestation were included. The intervention involved targeted training for healthcare professionals and an educational package on breastfeeding and skin-to-skin contact for parents.

Results
211 parents recorded a diary and skin-to-skin contact duration with the mother on day one increased from 12.9 h in the baseline group to 14.6 h in the intervention group ($p = 0.009$). The proportion of newborns receiving nearly continuous skin-to-skin contact (> 20 h) increased from 33% to 58% ($p = 0.001$). Newborns who had more skin-to-skin contact on day one were held more frequently by parents at 2 months.

Conclusions
The intervention increased skin-to-skin contact duration and the proportion of newborns receiving nearly continuous skin-to-skin contact during the first 24 h. Enhancing skin-to-skin contact is essential and the programme could

positively impact family health. (© 2025 The Author(s). Acta Paediatrica published by John Wiley & Sons Ltd on behalf of Foundation Acta Paediatrica.)
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2025-08375

Guidelines for Primary Pediatric Care Professionals to Help Patients Establish and Protect Milk Supply. Slater CN, Spatz DL (2025), MCN - American Journal of Maternal/Child Nursing vol 50, no 4, July/August 2025, pp 192-203

The first well-child encounter for healthy, full-term newborns occurs within the critical window for the establishment of the milk supply. Frequent, effective removal of human milk from the breast is essential to achieving a robust milk supply. Nurses in primary care settings are crucial in providing quality and timely lactation care to ensure the parent is experiencing effective milk removal. Identification of risk factors and barriers to achieving a milk supply requires adept assessment and knowledge of lactation physiology. Not all nurses receive formal education on human milk and lactation. This resource can be used by primary care nurses to prioritize establishing and protecting the milk supply among families with a desire to breastfeed. (© 2025, Wolters Kluwer Health, Inc. All rights reserved.)

2025-05965

Breastfeeding related knowledge, attitudes, perceptions and practices of primary healthcare professionals in Ireland: A national cross-sectional survey. McGuinness D, Frazer K, Brennan S, et al (2025), PLoS ONE vol 20, no 4, April 2025, e0320763

Background: Global research identifies the importance of breastfeeding, including the World Health Organisation in developing recommendations and noting over 800,000 child lives would be saved each year if breastfeeding was adopted following the recommendations of WHO/UNICEF. There is limited published data exploring breastfeeding knowledge, attitudes, perceptions and practices [KAPP] of health care professionals employed in primary care. Recent Irish evidence from one local geographical area identified general practitioners and general practice nurses [GPs and GPNs] received limited formal breastfeeding education within undergraduate or postgraduate education programmes and were interested in undertaking further professional development, education and training.

Methods: Following ethical approval, a national cross sectional online survey using a breastfeeding [KAPP] survey instrument was completed using the Qualtrics platform. All registered GPs, GP trainees and General Practice Nurses [GPNs] in the Republic of Ireland were invited to participate. The online survey link was distributed via Ireland's Health Service Executive health link email register via two senior HSE gatekeepers. Data collection was from June 1st 2023, to November 17th, 2023.

Results: A total of 662 primary health professionals participated, including 58.2% GPs, 14.2% GP trainees and 27.6% GPNs. The response rate to the survey was 10%, with approximately 6618 healthcare professionals receiving the link to the survey and 662 participating. Approximately 78% of respondents reported always recommending breastfeeding to women, and the majority (94.2%) were interested in completing further breastfeeding education. Barriers to training noted were time (84.3%), workload (62%) and financial cost (34.9%). Perceived and factual breastfeeding knowledge, perceived attitude and confidence scores with breastfeeding related issues significantly differed among the three groups.

Conclusion: This national study reports low engagement with a national KAPP survey. There is inadequate preparation of primary healthcare professionals both theoretically and clinically to promote, protect and support breastfeeding in the primary healthcare setting, and has important implications for supporting wellbeing and shaping population health and achieving sustainable development goals.

Full URL: https://doi.org/10.1371/journal.pone.0320763

2025-04660

Breastfeeding Duration and Child Development. Goldshtein I, Sadaka Y, Amit G, et al (2025), JAMA Network Open vol 8, no 3, March 2025, e251540

Importance Detecting and addressing potentially modifiable factors associated with healthy development is key to optimizing a child’s potential. When investigating the outcomes of child development, it is important to account for

disparities in feeding practices and avoid confounding bias.

Objectives To estimate the independent association between breastfeeding and attainment of developmental milestones or neurodevelopmental conditions.

Design, Setting, and Participants This retrospective cohort study used data from a national network for routine child development surveillance in Israel linked with national social insurance financial entitlements for neurodevelopmental deficiencies. Participants were children born between January 2014 and December 2020 after at least 35 weeks' gestation without severe morbidity and with at least 1 follow-up surveillance visit at 2 to 3 years of age. Outcome data were collected in March 2023.

Exposures Duration and exclusivity of breastfeeding in infancy.

Main Outcomes and Measures The primary outcomes were delays in attainment of developmental milestones and diagnosis of prespecified neurodevelopmental conditions. Multivariable regression, matching, and within-family analyses were used to estimate adjusted odds ratios (AORs) after accounting for potential confounding factors related to the child (gestational age, birth weight, multiple gestation, and child order in the family) and mother (age, socioeconomic status, educational level, marital status, employment, nationality, and postpartum depression).

Results Of 570 532 children (291 953 [51.2%] male), 20 642 (3.6%) were preterm, 38 499 (6.7%) were small for gestational age, and 297 571 (52.1%) were breastfed for at least 6 months (123 984 [41.7%] were exclusively breastfed). Children who were breastfed for at least 6 months exhibited fewer delays in attaining language and social or motor developmental milestones compared with children exposed to less than 6 months of breastfeeding (AOR, 0.73 [95% CI, 0.71-0.76] for exclusive breastfeeding; AOR, 0.86 [95% CI, 0.83-0.88] for nonexclusive breastfeeding). Among 37 704 sibling pairs, children who were breastfed for at least 6 months were less likely to demonstrate milestone attainment delays (OR, 0.91 [95% CI, 0.86-0.97]) or be diagnosed with neurodevelopmental conditions (OR, 0.73 [95% CI, 0.66-0.82]) compared with their sibling with less than 6 months of breastfeeding or no breastfeeding.

Conclusions and Relevance In this cohort study, exclusive or longer duration of breastfeeding was associated with reduced odds of developmental delays and language or social neurodevelopmental conditions. These findings may guide parents, caregivers, and public health initiatives in promoting early child development. (Author)

Full URL: https://doi.org/10.1001/jamanetworkopen.2025.1540

2025-04641

Breastfeeding after immediate versus delayed postpartum contraceptive implant placement: a non-inferiority randomized controlled trial. Krashin JW, Rivera-Montalvo M, Leeman L, et al (2025), American Journal of Obstetrics & Gynecology (AJOG) vol 233, no 4, October 2025, pp 292.e1-292.e9

Background
Breastfeeding and access to contraception are important to patient and public health. The etonogestrel contraceptive implant is a popular and highly effective long-acting progestin contraceptive with few medical contraindications. Despite theoretical concern about early exogenous progestin exposure inhibiting lactogenesis, previous studies showed reassuring lactogenesis and long-term breastfeeding with immediate placement. However, no studies compare placement within 24 hours postpartum to delayed placement at a postpartum visit.
Objective
We studied the association between etonogestrel contraceptive implant placement within 24 hours versus at least two weeks postpartum and breastfeeding continuation at eight weeks postpartum.
Study Design
We conducted a non-inferiority randomized controlled trial of postpartum participants who planned to breastfeed and use the etonogestrel implant at two university hospitals in the Mountain West. Participants were at least 13 years old, fluent in English or Spanish, had term deliveries, and lacked contraindications to implant use. They were randomized 1:1 to implant placement within 24 hours or at least two weeks postpartum. We collected baseline participant characteristics from chart review and questionnaires. Participants reported breastfeeding status and implant use via electronic questionnaires at 2, 4, 8, 12, and 24 weeks postpartum. The study was powered to assess a 15% non-inferiority margin between groups of the primary outcome, any breastfeeding at 8 weeks in the per protocol population.
Results

We enrolled 150 participants (n=78 immediate, n=72 delayed). After removing participants who declined implant placement, withdrew, or were ineligible (n=8) or lacked primary outcome data (n=16), the modified intention-to-treat analysis included 126 participants (n=69 immediate, n=57 delayed). The per protocol analysis included 115 participants (n=62 immediate, n=53 delayed) after excluding additional participants who received the implant outside of the placement timing windows (n=11). Participants were similar in age, race and ethnicity, previous breastfeeding experience, delivery mode, and epidural use; the delayed group reported prior implant use less frequently (29% vs 43%). In the per protocol analysis 77.4% (48/62) of participants in the immediate group and 81.1% (43/53) in the delayed group reported any breastfeeding at eight weeks; the lower limit of the one-sided 95% confidence interval around this -3.7% difference was -16%, exceeding our pre-defined non-inferiority margin. The difference between groups in the modified intention-to-treat group was smaller (-0.6%) and within the non-inferiority margin (-12.8% lower limit of the one-sided 95% CI): 78.3% (54/69) immediate and 78.9% (45/57) delayed. Implant continuation at 24 weeks trended toward favoring immediate placement (96%, 52/54) compared to in those assigned to delayed placement, (85%, 39/46, p=0.08). Exclusive or any breastfeeding and implant continuation through 24 weeks were similar between groups.
Conclusion
The results demonstrated no clinically important differences in breastfeeding and implant continuation outcomes though our primary outcome exceeded our pre-defined non-inferiority margin. These reassuring data add to the evidence base for supporting etonogestrel implant initiation for breastfeeding people whenever they desire it postpartum. (Author) [Erratum: American Journal of Obstetrics & Gynecology (AJOG), vol 233, no 6, December 2025, pp 688-689. https://doi.org/10.1016/j.ajog.2025.08.015]

2025-04635

Breastfeeding self-efficacy status and associated factors among postpartum mothers at Hadiya Zone public hospitals, Southern Ethiopia. Nigussiee L, Demeke T, Bagilkar V, et al (2025), PLoS ONE vol 20, no 2, February 2025, e0317763

Background: Breastfeeding is a crucial health-promoting behavior that has several positive effects on the health of both mothers and newborns. Breastfeeding self-efficacy (BFSE) status is an important factor that is positively related to breastfeeding, as it influences a woman's decision to breastfeed or not. Therefore, the objective of this study is to assess the BFSE status and its associated factors among postpartum mothers at public hospitals in the Hadiya Zone.

Method: A cross-sectional study design was conducted from August 1-30, 2022, at public hospitals in the Hadiya Zone, southern Ethiopia. Data were collected from 416 participants using a pretested, structured questionnaire. Study participants were selected using a systematic random sampling technique from four public hospitals. The data were entered into Epi Data version 3.1 and analyzed using the SPSS version 24. Bivariable analysis was conducted initially, and variables with p values ≤ 0.25 were entered into multivariable logistic regression. Statistical significance was declared at a p value ≤ 0.05.

Results: The results of this study showed that 48% had a high level of BFSE. On multivariable logistic regression analysis, the variables age ≥ 35 years old [AOR = 3.596; 95% CI (1.564, 8.26)], age 20 to 34 [AOR = 2.352; 95% CI (1.2275, 4.506)], spontaneous vaginal delivery [AOR = 2.755; 95% CI (1.636, 5.566)], breastfeeding experience [AOR =1.845; 95% CI (1.028, 3.3)], more than secondary educational status [AOR = 6.856; 95% CI (2.670-17.603)], and intended pregnancy [AOR = 4.156; 95% CI (2.239, 7.714)] were significantly associated with high breastfeeding self-efficacy status.

Conclusion: The study findings suggest that mothers attending postpartum care at Hadiya Zone Hospital have a low status of breastfeeding self-efficacy. Therefore, efforts should be made to enhance mothers' breastfeeding self-efficacy status before they are discharged from the hospital.

Full URL: https://doi.org/10.1371/journal.pone.0317763

2025-04165

Breastfeeding Intentions, Attitudes, and Knowledge Among Medical Students in Croatia. Franić S, Čatipović M, Zakarija-Grković I (2025), Journal of Human Lactation vol 41, no 1, February 2025, pp 82–94

Background:
Medical students should have adequate knowledge and positive attitudes toward breastfeeding to support

breastfeeding dyads. No studies in Croatia have explored breastfeeding knowledge, attitudes or intentions among medical students.
Research Aim:
To investigate breastfeeding knowledge, attitudes and intentions among medical students at the University of Split School of Medicine.
Methods:
A cross-sectional study was conducted from March to April 2023, using online and written questionnaires. All medical students without children were eligible to participate. The validated Breastfeeding Intentions, Attitudes, and Knowledge Questionnaire (BIAKQ) was used. Sociodemographic data were collected. Analysis was conducted using descriptive statistics, t tests, and Mann-Whitney U test.
Results:
A total of 357 medical students participated (response rate 64.1%). There was no significant difference between preclinical and clinical students. Students who attended the elective “Breastfeeding Medicine” demonstrated significantly more positive attitudes toward breastfeeding (Mean Rank = 215.62) than those who did not attend (Mean Rank = 173.58; U= 5468.50, p = 0.010); however, no significant difference was found in knowledge or intentions. Female students had significantly more positive attitudes compared to male students (Mean Rank = 189.47 vs. Mean Rank = 150.55, U = 9796.50, p = 0.001), whereas male students expressed significantly more positive intentions (M = 36.97, SD = 5.26 vs. M = 34.44, SD = 5.86, t = −3.69, p = 0.002). The mean knowledge score was 11.92 (SD = 1.43) out of 13 points. Negative attitudes towards breastfeeding beyond 1 year and breastfeeding in public were found.
Conclusion:
Despite adequate breastfeeding knowledge, some medical students demonstrated negative attitudes and intentions toward breastfeeding. Including breastfeeding education into core medical subjects focusing on the importance of breastfeeding for maternal and infant health and the risks of formula feeding could help improve attitudes, especially during the clinical years. It would also be important to address prevailing prejudices. (Author)

2025-03815

Comparison of LATCH Scores between Mothers’ Breastfeeding Teaching Done by Registered and Practical Nurses during the Immediate Postpartum Period; A Randomized Controlled Trial. Ketsuwan S, Baiya N, Hanprasertpong T, et al (2019), Journal of the Medical Association of Thailand vol 102, Suppl. 6, July 2019, pp 41-45

Background : Breastfeeding teaching is essential during the postpartum period. Recently, teaching by registered nurses has been shown to be insufficient. To complete the breastfeeding teaching workload, practical nurses might be a good choice to help resolving this problem.
Objective : The objective is to compare LATCH scores between breastfeeding taught by registered nurses and practical nurses during immediate postpartum.
Materials and Methods: This is a randomized controlled trial. The postpartum mothers with no delivery complications were randomly assigned to teaching by a registered or practical nurse. Thirty minutes of breastfeeding teaching was taught by a registered nurse in the first group and by a practical nurse in the second group. LATCH scores were assessed before and after breastfeeding instruction. The demographic data and LATCH scores were collected, analyzed and compared between both groups.
Results : Data from 250 postpartum mothers were available for analysis, 125 in the teaching by a registered nurse group and 125 from teaching by a practical nurse group. The baseline characteristics of both groups were similar. There were statistically significant differences in LATCH scores between the before and after breastfeeding teaching in both groups. There were no significant differences of the before and after teaching means between teaching by registered nurse and teaching by practical nurse groups were found.
Conclusion : Breastfeeding instruction by registered nurses had no significant differences from those taught by practical nurses when the nurses’ functional competency was controlled in a proper training setting.

Keywords : Breastfeeding teaching, Registered nurse, Practical nurse (Author)

Full URL: http://jmatonline.com/view.php?id=4830

2025-02253

Evaluating interdisciplinary breastfeeding and lactation knowledge, attitudes and skills: An evaluation of a professional graduate programme for healthcare professionals. McGuinness D, Frazer K, Conyard KF, et al (2025), PLoS ONE vol 20, no 1, January 2025, e0310500

Breastfeeding theoretical and skills training is important for health care professionals engaging with the mother infant dyad to increase breastfeeding exclusivity and duration. The aim of this study was to evaluate the knowledge,

attitudes and practices (KAPs) of health care professionals following completion of a university professional graduate programme in breastfeeding and lactation. A pre and post-educational study design was used. All students enrolled in a six month programme were invited to complete an online anonymous survey at two time points: January 2023 and July 2023. Ethical approval (LS-C-23-17) was obtained in January 2023. Descriptive statistics were utilised to report percentages and means, and independent T tests were used to report mean differences between variables on knowledge, attitude and practices. All students completed the module. The pre survey participant response rate was n = 55 (92.82%) and the post survey participant response rate n = 33 (60%). Comparison of the pre and post questionnaire report nine statistically significant results following completion of the university breastfeeding and lactation programme. Knowledge scores increased specifically with higher mean knowledge scores for reporting "I am confident with my knowledge about breastfeeding" and statistically significant mean difference of 0.29 following completion of the module (95% CI, 0.13 to 0.45) (t (64) = 3.59, p = 0.001). The programme evaluation identifies the importance of a professional graduate breastfeeding and lactation education programme for interdisciplinary health care professionals increasing knowledge, attitudes and practices and ultimately increasing breastfeeding rates in the short and long term, with improved maternal and child health outcomes.

Full URL: https://doi.org/10.1371/journal.pone.0310500

2025-01903

"Butterflies in the air, you're now a breastfeeding mother": A qualitative study of women's experiences receiving postnatal midwifery breastfeeding support. Shipton EV, Foxcroft K, de Jersey SJ, et al (2025), Women and Birth: Journal of the Australian College of Midwives vol 38, no 1, January 2025, 101859

Background
Despite breastfeeding being widely accepted as the optimal feeding method for infants many women do not meet their breastfeeding goals or continue to breastfeed as long as recommended. Continuation of exclusive breastfeeding is multifactorial, with midwifery support during the postnatal period considered to be an important component. However, little is known about how women receive this support from midwives across varying models of care.
Aim
To explore women's experiences of midwifery education and support with postnatal infant feeding in the context of midwifery models of care.
Methods
Semi-structured interviews were conducted with 14 postnatal women, using an interpretive descriptive approach. Data were analysed through reflective thematic analysis to identify themes.
Findings
Two themes each with three subthemes were identified: (1) How midwifery breastfeeding support was provided, and (2) Expectations and realities of breastfeeding.
Discussion
Experiences of breastfeeding support and education by midwives were often reported as being superficial and at times, simplistic. Midwives offered breastfeeding guidance that focused on technical aspects of latching, which allowed for brief episodes of care before moving onto other tasks. Women described surprise at the realities of breastfeeding a baby, and the understanding that it involves more than simply providing nutrition.
Conclusion
Midwifery education and support of breastfeeding should be prioritised as an important component of care, and personalised to the woman's requirements. Specifically, it is important to provide education beyond a focus on the health benefits of breastfeeding, which may allow midwives to promote other aspects, such as positive emotional and bonding experiences. (Author)

Full URL: https://doi.org/10.1016/j.wombi.2024.101859

2025-01749

Estimation of the level of knowledge on breastfeeding of midwives of the Madrid Health Service through the use of a validated questionnaire. Sanz LD, Mora Urda AI, Pérez Bravo MD (2025), Midwifery vol 142, March 2025, 104304

Background
Breastfeeding women may be dissatisfied with the health care received. Poor breastfeeding training of health professionals has been documented in other studies. Improving the level of breastfeeding knowledge of

professionals may increase women's satisfaction, the average duration of breastfeeding and the utilization of resources. However, these studies are scarce and especially in the midwifery group as a key element in the accompaniment of women and in the duration and maintenance of breastfeeding.
Aim
The aim of this study was to estimate the level of breastfeeding knowledge of midwives in the Madrid Health Service through the use of a validated questionnaire for nurses in Spanish.
Methods
This was a quantitative, descriptive, cross-sectional study and a convenience sampling.
Findings
A total of 133 midwives from primary and specialized care, mean age 42 years and level of complementary training in breastfeeding finally participated. The results show a high level of knowledge, classified as excellent. However, the areas most in need of training are feeding in the first hours of life, composition of breast milk, characteristics of effective latch-on and the use of pharmacological treatment during breastfeeding.
Discussion and conclusion
The need for regular training courses among professionals seems to be a real need. The level of knowledge of midwives in the Community of Madrid is good, but it is necessary to improve their level of education and training to overcome the health barriers that hinder support and follow-up. (Author)

2025-01243

Admitted when Breastfeeding: Impact and Experiences of Hospital Care. Llupià A, Fité A, Lladó A, et al (2025), Breastfeeding Medicine vol 20, no 5, May 2025, pp 320–326

Objective: This study analyzes the impact and experiences of hospitalization for any reason on breastfeeding women.
Methods: Cross-sectional online survey (November 2019–March 2020). Adults admitted to a Spanish hospital for at least one night, when actively breastfeeding, were included. The questionnaire aimed at assessing breastfeeding, breast complications, and support and perceived health care workers' attitudes to breastfeeding.
Results: Of the 266 included participants, 70 (26%) stopped breastfeeding during hospitalization, and 13 (5%) interrupted it permanently. A total of 24 (10%) participants reported that hospitalization meant problems for later breastfeeding, and 67 (25%) reported experiencing breast complications. The most common negative comment was that the child was too old to be breastfed (median age, 15 months [interquartile range (IQR) 11–25]). Problems for later breastfeeding due to the hospitalization were more likely if breastfeeding was interrupted (odds ratio [OR] 3.68, 95% confidence interval [CI] 1.32–10.5) or breast problems were experienced (OR 4.11, 95% CI 1.51–11.7). Problems were less likely when patients felt encouraged (OR 0.38, 95% CI 0.21–0.69) and hospitalized in a surgical inpatient area (OR 0.15, 95% CI 0.03–0.65).
Conclusions: Hospitalizations can cause breastfeeding and breast problems. Hospital services must update protocols to integrate breastfeeding into usual care. (Author)

2025-00743

Effect of Cold Storage on the Viable and Total Bacterial Populations in Human Milk. Stinson LF, Trevenen ML, Geddes DT (2022), Nutrients vol 14, no 9, April 2022, p 1875

Expression and cold storage of human milk is a common practice. Current guidelines for cold storage of expressed milk do not take into account the impact on the milk microbiome. Here, we investigated the impact of cold storage on viable bacterial populations in human milk. Freshly expressed milk samples (n = 10) were collected and analysed immediately, stored at 4 °C for four days, −20 °C for 2.25 months and 6 months, and −80 °C for 6 months. Samples were analysed using propidium monoazide (PMA; a cell viability dye) coupled with full-length 16S rRNA gene. An aliquot of each sample was additionally analysed without PMA to assess the impact of cold storage on the total DNA profile of human milk. Cold storage significantly altered the composition of both the viable microbiome and total bacterial DNA profile, with differences in the relative abundance of several OTUs observed across each storage condition. However, cold storage did not affect the richness nor diversity of the samples (PERMANOVA all $p > 0.2$). Storage of human milk under typical and recommended conditions results in alterations to the profile of viable bacteria, with potential implications for infant gut colonisation and infant health. (Author)

Full URL: https://doi.org/10.3390/nu14091875

2025-00734

Carotenoid Profile in Maternal/Cord Plasma and Changes in Breast Milk along Lactation and Its Association with Dietary Intake: A Longitudinal Study in a Coastal City in Southern China. Dai X, Yin H, Zhang J, et al (2022), Nutrients vol 14,

no 9, May 2022, p 1989

In this study, changes of carotenoids in breast milk were observed longitudinally for up to one year. Our study aimed to analyze the profile of carotenoids in breast milk and maternal/cord plasma and its correlation with dietary intake in Guangzhou. Plasma and breast milk samples of five stages during lactation (i.e., colostrum; transitional milk; and early, medium, and late mature milk) were collected from lactating mothers. The food frequency questionnaire (FFQ) was used for collecting data on dietary intake in the corresponding stages. Levels of lutein, zeaxanthin, β-cryptoxanthin, β-carotene, and lycopene were analyzed by high-performance liquid chromatography. We found that the total carotenoid level decreased gradually with the extension of lactation and eventually stabilized. Among them, the content of lutein increased from colostrum to transitional milk and decreased thereafter until it plateaued in the mature milk. Furthermore, lutein was reported as the dominant nutrient in maternal plasma, cord plasma, transitional milk, and mature milk at up to 400 days postpartum, while beta-carotene was predominant in colostrum. The content of β-carotenoid in middle and late mature breast milk was related to dietary intake ($r = 1.690$, $p < 0.05$). Carotenoid level in cord blood was lower than that in the mother's plasma and was related to the carotenoid intake in the mother's diet. Correlation of carotenoids between maternal and umbilical cord blood, breast milk, and maternal blood could well reflect the transport of carotenoids. These findings may help to guide mothers' diets during breastfeeding. (Author)

Full URL: https://doi.org/10.3390/nu14091989

2025-00726

Effects of Different Feeding Methods on the Structure, Metabolism, and Gas Production of Infant and Toddler Intestinal Flora and Their Mechanisms. Pi X, Hua H, Wu Q, et al (2022), Nutrients vol 14, no 8, April 2022, p 1568

In this study, we evaluated the effects of different feeding methods on the characteristics of intestinal flora and gas production in infants and toddlers by using an in vitro simulated intestinal microecology fermentation and organoid model. We found that the feeding method influences intestinal gas and fecal ammonia production in infants and toddlers. Supplementation with milk powder for infants in the late lactation period could promote the proliferation of beneficial bacteria, including Bifidobacteria. Intestinal flora gas production in a culture medium supplemented with fucosyllactose (2'-FL) was significantly lower than that in media containing other carbon sources. In conclusion, 2'-FL may reduce gas production in infant and toddler guts through two mechanisms: first, it cannot be used by harmful intestinal bacteria to produce gas; second, it can inhibit intestinal mucosa colonization by harmful bacteria by regulating the expression of intestinal epithelial pathogenic genes/signaling pathways, thus reducing the proliferation of gas-producing harmful bacteria in the gut. (Author)

Full URL: https://doi.org/10.3390/nu14081568

2025-00354

Sources of breastfeeding knowledge and support skills among midwives and students: a scoping review. Pangerl S, Ross-Adije S, Geraghty S, et al (2024), British Journal of Midwifery vol 32, no 12, December 2024, pp 662–671

Background/Aims

Early discontinuation of exclusive breastfeeding often occurs as a result of conflicting advice provided by midwives and other healthcare professionals. The aim of this study was to explore sources of breastfeeding knowledge and acquisition of support skills among midwives and midwifery students.

Methods

This scoping review explored peer-reviewed and grey literature, identifying and synthesising seven studies and one conference abstract published between 2014 and 2024, after screening 27 full-text articles based on eligibility criteria.

Results

Only one study focused on breastfeeding knowledge sources, revealing that on-the-job training was the primary source (64.4%) for midwives and nurses. Seven papers detailed educational programmes, including simulation workshops, animation videos and web resources. Grey literature highlighted relevant organisations, websites and social media platforms.

Conclusions

Despite the widespread availability of breastfeeding education resources, this review identified a significant gap in understanding how midwives and students use these resources.

Implications for practice

Enhancing training and support for midwives and students is important to ensure effective use of existing resources for breastfeeding education. Expanding the available digital resources would also provide vital support. (Author)

2024-13704

Breastfeeding Basic Competence in Primary Care: A Spanish Translation and Cross-Cultural Validation of the CAPA Questionnaire. Romero-Domínguez V, Ponjoan A, Vidal M, et al (2024), Journal of Human Lactation vol 40, no 4, November 2024, pp 512–521

Background:
The number of validated questionnaires that assess the level of breastfeeding competence of primary care professionals who attend lactating mothers is limited.
Research Aim:
To validate the CAPA (Competència en l'Atenció Primària sobre Alletament [Breastfeeding Competence in Primary Care]) questionnaire into Spanish in collaboration with professionals from the primary care services of the Comunidad de Madrid (Spain).
Methods:
In this multicentric study, four bilingual healthcare professionals translated the CAPA questionnaire into Spanish and back-translated it into Catalan. The cross-cultural adaptation included a discussion by an expert committee, a review by a philologist, and a pilot study that involved 13 healthcare residents. We randomly selected professionals from specialties involved in breastfeeding. The re-test was conducted 3 weeks later, aiming to avoid changes in the studied population. We performed a factor analysis to identify underlying constructs and hypothesis-testing to assess the validity of the questionnaire and estimated the Cronbach Alpha and intraclass correlation coefficient (ICC) to assess its reliability.
Results:
A total of 198 professionals participated by responding to the questionnaire. Factorial analysis showed that the questionnaire was unidimensional. Hypothesis testing showed that, of all the considered professional groups, midwives achieved the highest mean score ($M = 131.7$, $SD = 10.9$, $p < 0.001$). Amongst the other professionals, only 26.5% achieved a basic level of breastfeeding competence. The Cronbach alpha and ICC were 0.852 (95% CI [0.821, 0.880]) and 0.890 (95% CI [0.800. 0.937]).
Conclusions:
The Spanish CAPA questionnaire is a valid and reliable tool for assessing breastfeeding basic competence among primary care professional groups who attend lactating mothers. (Author)

2024-13703

Determinants of Tangible Breastfeeding Support Among Health Workers: A Multicenter Cross-Sectional Study. Alao MA, Ibrahim OR, Elo-Ilo JC, et al (2024), Journal of Human Lactation vol 40, no 4, November 2024, pp 522–534

Background:
Breastfeeding is crucial in providing infants with needed nutrition and immunity to foster their healthy growth and development; yet, optimal support from health workers is critical for it to be successful.
Aim:
To determine factors influencing tangible breastfeeding support among health workers in Nigeria.
Methods:
This cross-sectional study was conducted in Nigeria's six geopolitical zones between August 2022 and February 2023 among health workers (N = 2,922). Data were gathered through an interviewer-administered, validated questionnaire. Significant factors of tangible breastfeeding support were identified through multivariable logistic regression, and corresponding odds ratios with 95% confidence intervals were reported.
Results:
The mean age of the health workers was 28.6 (SD = 9.3) years. Just 45% (1,316) achieved optimal scores for tangible breastfeeding support. Only 31.4% (918) of lactation support providers/specialists practice tangible breastfeeding support and half (50.6%, 1,479) had a favorable attitude towards providing tangible breastfeeding support. About two-fifths (39.3%, 1,148) engaged caregivers in reviewing breast milk storage procedures, whereas, 54.6% (1,595) and 78.0% (2,279) of health workers assisted with breast pumps and breastfeeding attachment respectively. The odds of having optimal tangible breastfeeding support were higher for health workers aged 52 years or older compared to those aged under 20 years (aOR 1.88, 95% CI [1.13, 3.12]), a positive attitude (aOR 1.43, 95% CI [1.22, 1.69]), availability of a breastfeeding champion (aOR 1.47, 95% CI [1.21, 1.79]), 1.69]), provision of breast-pump videos (aOR; 2.33, 95% CI [1.85, 2.95]), and hand-expression videos (aOR; 1.41, 95% CI [1.02, 1.79]). (duplication)
Conclusion:

Health workers' tangible breastfeeding support in Nigeria is suboptimal and is driven by age, service level, attitude, availability of breastfeeding champions, and appropriate practice aids. Targeted interventions to improve health workers' attitudes, technical skills, provision of aids, and task shifting to non-specialists are needed for optimal tangible breastfeeding support. (Author)

2024-12986

Discourses and critiques of breastfeeding and their implications for midwives and health professionals. Smyth D, Hyde A (2020), Nursing Inquiry vol 27, no 3, July 2020, e12339

This article is a discussion of the recently emerging critique of pro-breastfeeding discourses in academic literature, and what this means for midwives and other professionals who find themselves promoting breastfeeding because of professional expectations or indeed workplace policies. Various strands in the debate are explored, starting with dominant and familiar 'evidence' and descriptions of breastfeeding and breastmilk that are carried through to international policies that advocate breast over formula feeding. We then consider evidence predominantly from social science literature that has found some women's experiences of infant feeding to be at variance with the dominant pro-breastfeeding ideology. We argue that midwives and others delivering maternity care are the means to deliver the policy aspirations contained in the World Health Organization (WHO, 2018) Baby Friendly Hospital Initiative document that makes selective positive claims about breastfeeding without adequately considering its potential drawbacks. We conclude that although the benefits of breastfeeding tend to be exaggerated in promotional material, on balance the weight of evidence still favours breast over formula feeding. We challenge the charge that breastfeeding jeopardises women's financial position by arguing that it is not breastfeeding per se that impacts negatively on women's economic prospects, but rather the way in which society is socially organised.

Keywords: breastfeeding; challenges; discourse; feminism; health policy; women's health.

2024-12860

Breastfeeding: QualityWatch. Nuffield Trust (2023), Nuffield Trust, London, 20 October 2023

Background

Breastfeeding has short- and long-term health benefits for both mother and child. It is estimated that if all UK infants were exclusively breastfed, the number hospitalised with diarrhoea would be halved, and the number hospitalised with a respiratory infection would drop by a quarter. Mothers who do not breastfeed have an increased risk of breast and ovarian cancers and may find it harder to return to their pre-pregnancy weight.

The Royal College of Paediatrics and Child Health supports the practice of breastfeeding and encourages exclusive breastfeeding (feeding only breast milk) for the first six months of an infant's life. Mothers who choose to breastfeed should receive support to enable them to continue breastfeeding for as long as they wish. (Author)

Full URL: https://www.nuffieldtrust.org.uk/resource/breastfeeding

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2024-12650

Century Wide Changes in Macronutrient Levels in Indian Mothers' Milk: A Systematic Review. Khanna D, Yalawar M, Verma G, et al (2022), Nutrients vol 14, no 7, March 2022, p 1395

The purpose of this systematic review was to understand Indian mothers' milk composition and report changes in it over the past 100 years. A review was conducted in accordance with PRISMA and registered with PROSPERO (CRD42022299224). All records published between 1921 and 2021 were identified by searching databases Google Scholar, ResearchGate, PubMed, and the Cochrane Database of Systematic Reviews. All observational, interventional, or supplementation studies reporting macronutrients (protein, fat, lactose) in milk of Indian mothers, delivering term infants, were included. Publications on micronutrients, preterm, and methods were excluded. Milk was categorized into colostrum, transitional, and mature. In all, 111 records were identified, of which 34 were included in the final review. Fat ranged from 1.83 to 4.49 g/100 mL, 2.6 to 5.59 g/100 mL, and 2.77 to 4.78 g/100 mL in colostrum, transitional, and mature milk, respectively. The protein was higher in colostrum (1.54 to 8.36 g/100mL) as compared to transitional (1.08 to 2.38 g/100 mL) and mature milk (0.87 to 2.33 g/100 mL). Lactose was lower in colostrum (4.5–6.47 g/100 mL) as compared to transitional (4.8–7.37 g/100 mL) and mature milk ranges (6.78–7.7 g/100 mL). The older studies (1950–1980) reported higher fat and protein in colostrum as compared to subsequent time points. There were variations in maternal nutritional status, diet, socioeconomic status, and regions along with study design specific

differences of time or methods of milk sampling and analysis. Additionally, advancements in methods over time make it challenging to interpret time trends. The need for conducting well-designed, multicentric studies on nutrient composition of Indian mother's milk using standardized methods of sampling and estimation for understanding the role of various associated factors cannot be undermined. (Author)

Full URL: https://doi.org/10.3390/nu14071395

2024-12646

Profile of Nucleotides in Chinese Mature Breast Milk from Six Regions. Yang L, Guo Z, Yu M, et al (2022), Nutrients vol 14, no 7, March 2022, p 1418

This study measured the total potentially available nucleoside (TPAN) content in breast milk from six different regions of China as a part of the Maternal Nutrition and Infant Investigation (MUAI) study. A total of 631 breast milk samples were collected from healthy, lactating women with singleton, full-term pregnancies between 40 and 45 days postpartum in Changchun, Chengdu, Lanzhou, Shanghai, Tianjin, and Guangzhou. TPAN and free 5'-monophosphate nucleotide (5'-MNT) contents were determined by high-performance liquid chromatography. The TPAN content of the Chinese mature milk ranged from 11.61 mg/L to 111.09 mg/L, with a median level of 43.26 mg/L. Four types of nucleotides were identified, and the median levels of cytidine monophosphate (CMP), uridine monophosphate (UMP), guanosine monophosphate (GMP), and adenosine monophosphate (AMP) were 22.84 mg/L, 9.37 mg/L, 4.86 mg/L, and 4.80 mg/L, respectively. CMP was the predominant nucleotide, accounting for 52.9% of the TPAN content, while free 5'-MNT accounted for 18.38% of the TPAN content. The distribution pattern of the TPAN content and level of the individual nucleotides were significantly different among the selected regions ($p < 0.05$), but the result showed no significant differences in the TPAN level in breast milk ($p > 0.05$). In addition, no correlation was reported between the geographic distribution and TPAN levels. This result showed that TPAN better reflects the level of total potential nucleosides in Chinese breast milk rather than 5'-MNT in free form. CMP, UMP, GMP, and AMP are the only 4 types of nucleotides reported in all detections. In addition, results revealed a large variation of TPAN levels in Chinese breast milk across six regions, so that the median value may not be the optimal fortification level of TPAN for Chinese infant populations. (Author)

Full URL: https://doi.org/10.3390/nu14071418

2024-12645

Bifidobacterium Species Colonization in Infancy: A Global Cross-Sectional Comparison by Population History of Breastfeeding. Taft DH, Lewis ZT, Nguyen N, et al (2022), Nutrients vol 14, no 7, March 2022, p 1423

Bifidobacterium species are beneficial and dominant members of the breastfed infant gut microbiome; however, their health benefits are partially species-dependent. Here, we characterize the species and subspecies of Bifidobacterium in breastfed infants around the world to consider the potential impact of a historic dietary shift on the disappearance of B. longum subsp. infantis in some populations. Across populations, three distinct patterns of Bifidobacterium colonization emerged: (1) The dominance of Bifidobacterium longum subspecies infantis, (2) prevalent Bifidobacterium of multiple species, and (3) the frequent absence of any Bifidobacterium. These patterns appear related to a country's history of breastfeeding, with infants in countries with historically high rates of long-duration breastfeeding more likely to be colonized by B. longum subspecies infantis compared with infants in countries with histories of shorter-duration breastfeeding. In addition, the timing of infant colonization with B. longum subsp. infantis is consistent with horizontal transmission of this subspecies, rather than the vertical transmission previously reported for other Bifidobacterium species. These findings highlight the need to consider historical and cultural influences on the prevalence of gut commensals and the need to understand epidemiological transmission patterns of Bifidobacterium and other major commensals. (Author)

Full URL: https://doi.org/10.3390/nu14071423

2024-12641

Intestinal 'Infant-Type' Bifidobacteria Mediate Immune System Development in the First 1000 Days of Life. Lin C, Lin Y, Zhang H, et al (2022), Nutrients vol 14, no 7, April 2022, p 1498

Immune system maturation begins early in life, but few studies have examined how early-life gut microbiota colonization educates the neonatal immune system. Bifidobacteria predominate in the intestines of breastfed infants and metabolize human milk oligosaccharides. This glycolytic activity alters the intestinal microenvironment and consequently stimulates immune system maturation at the neonatal stage. However, few studies have provided mechanistic insights into the contribution of 'infant-type' Bifidobacterium species, especially via metabolites such as short-chain fatty acids. In this review, we highlight the first 1000 days of life, which provide a window of opportunity

for infant-type bifidobacteria to educate the neonatal immune system. Furthermore, we discuss the instrumental role of infant-type bifidobacteria in the education of the neonatal immune system by inducing immune tolerance and suppressing intestinal inflammation, and the potential underlying mechanism of this immune effect in the first 1000 days of life. We also summarize recent research that suggests the administration of infant-type bifidobacteria helps to modify the intestinal microecology and prevent the progress of immune-mediated disorders. (Author)

Full URL: https://doi.org/10.3390/nu14071498

2024-12577

Maternal Vitamin D Status Correlates to Leukocyte Antigenic Responses in Breastfeeding Infants. Newton DA, Baatz JE, Chetta KE, et al (2022), Nutrients vol 16, no 6, March 2022, p 1266

It is unknown if vitamin D (vitD) sufficiency in breastfeeding mothers can lead to physiological outcomes for their children that are discernible from infant vitD sufficiency per se. In a 3-month, randomized vitD supplementation study of mothers and their exclusively breastfeeding infants, the effects of maternal vitD sufficiency were determined on infant plasma concentrations of 25-hydroxyvitamin D (i.e., vitD status) and 11 cytokines. An inverse correlation was seen between maternal vitD status and infant plasma TNF concentration ($r = -0.27$; $p < 0.05$). Infant whole blood was also subjected to in vitro antigenic stimulation. TNF, IFNγ, IL-4, IL-13, and TGFβ1 responses by infant leukocytes were significantly higher if mothers were vitD sufficient but were not as closely correlated to infants' own vitD status. Conversely, IL-10 and IL-12 responses after antigenic challenge were more correlated to infant vitD status. These data are consistent with vitD-mediated changes in breast milk composition providing immunological signaling to breastfeeding infants and indicate differential physiological effects of direct-infant versus maternal vitD supplementation. Thus, consistent with many previous studies that focused on the importance of vitD sufficiency during pregnancy, maintenance of maternal sufficiency likely continues to affect the health of breastfed infants. (Author)

Full URL: https://doi.org/10.3390/nu14061266

2024-11188

Developing an Instrument to Measure Public Health Nurses' Competence Related to Breastfeeding Beyond 12 Months. Pöyhönen N, Ojantausta O, Kaunonen M, et al (2024), Journal of Human Lactation vol 40, no 3, August 2024, pp 434–444

Background:
Health professionals need adequate competence to support breastfeeding beyond infancy. There is no established instrument to measure health professionals' competence regarding long-term breastfeeding. To respond to this shortcoming, the Long-Term Breastfeeding Competence Scale (LBCS) was developed.
Research Aim:
To develop and pilot an instrument that measures public health nurses' competence related to breastfeeding beyond 12 months in order to provide adequate breastfeeding counseling for families.
Methods:
This study was conducted as a cross-sectional online survey on public health nurses working in maternity and/or child health clinics. The relevance and clarity of the LBCS were assessed by an expert panel (N = 6). Public health nurses (N = 197) completed the LBCS, which consisted of a knowledge and skills dimension and an attitude dimension. Descriptive statistics were used to describe the characteristics of the study sample. The conceptual validity of the knowledge and skills dimension was assessed using the dichotomous Rasch analysis, and attitude dimension using the exploratory factor analysis. Internal consistency was evaluated using Cronbach's alpha. The distribution of the items was summarized by descriptive statistics.
Results:
According to expert panel evaluations, the LBCS was found to meet the requirements for relevance and clarity (S-CVI 0.90). The internal consistency of the instrument was at a good level ($\alpha = 0.796$) and met the requirements set for a new instrument.
Conclusion:
The LBCS is appropriate to determine public health nurses' competence related to breastfeeding beyond 12 months. The LBCS can be used to identify the need for education concerning breastfeeding beyond 12 months. (Author)

Full URL: https://doi.org/10.1177/08903344241254343

2024-10274

Barriers and facilitators to exclusive breastfeeding among Black mothers: A qualitative study utilizing a modified Barrier Analysis approach. Tran V, Masterson AR, Frieson T, et al (2023), Maternal & Child Nutrition vol 19, no 1, January 2023,

e13428

Breastfeeding has health benefits for both infants and mothers, yet Black mothers and infants are less likely to receive these benefits. Despite research showing no difference in breastfeeding intentions by race or ethnicity, inequities in breastfeeding rates persist, suggesting that Black mothers face unique barriers to meeting their breastfeeding intentions. The aim of this study is to identify barriers and facilitators that Black women perceive as important determinants of exclusively breastfeeding their children for at least 3 months after birth. Utilizing a Barrier Analysis approach, we conducted six focus group discussions, hearing from Black mothers who exclusively breastfed for 3 months and those who did not. Transcripts were coded starting with a priori parent codes based on theory-derived determinants mapped onto the Socioecological Model; themes were analysed for differences between groups. Facilitators found to be important specifically for women who exclusively breastfed for 3 months include self-efficacy, lactation support, appropriate lactation supplies, support of mothers and partners, prior knowledge of breastfeeding, strong intention before birth and perceptions of breastfeeding as money-saving. Barriers that arose more often among those who did not exclusively breastfeed for 3 months include inaccessible lactation support and supplies, difficulties with pumping, latching issues and perceptions of breastfeeding as time-consuming. Lack of access to and knowledge of breastfeeding laws and policies, as well as negative cultural norms or stigma, were important barriers across groups. This study supports the use of the Socioecological Model to design multicomponent interventions to increase exclusive breastfeeding outcomes for Black women. (Author)

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2024-10268

The impact of intrapartum and immediate post-partum complications and newborn care practices on breastfeeding initiation in Ethiopia: A prospective cohort study. Mohammed S, Abukari AS, Afaya A (2023), Maternal & Child Nutrition vol 19, no 1, January 2023, e13449

This study aimed to investigate the impact of intrapartum and post-partum complications and newborn care practices on early initiation of breastfeeding (EIBF). Data for the study came from a prospective cohort study in Ethiopia that recruited and followed pregnant and post-partum women from 2019 to 2021. Resident enumerators conducted interviews at enrolment in 2019 and follow-ups at 6 weeks, 6 months and 1 year post-partum. The present analysis is based on data from the baseline survey and 6 weeks follow-up. Multivariable logistic regression was used to estimate the effects of newborn care practices and intrapartum and post- partum complications on EIBF (the proportion of newborns who initiated breastfeeding within the first hour of birth). Overall, 2660 mother–infant pairs were included in this analysis. After adjustment, EIBF was less likely among women who experienced intrapartum haemorrhage (adjusted odds ratio [AOR]: 0.76, 95% confidence interval [CI]: 0.59–0.97), malpresentation (AOR: 0.46, 95% CI: 0.30–0.72) and convulsions (AOR: 0.48, 95% CI: 0.34–0.66) during childbirth. Mother–newborn skin-to-skin contact increased the likelihood of EIBF (AOR: 1.47, 95% CI: 1.11–1.94). Women who experienced post-partum haemorrhage (AOR: 0.63, 95% CI: 0.47–0.84), retained placenta for more than 30 min (AOR: 0.36, 95% CI: 0.24–0.52) and convulsions after delivery (AOR: 0.57, 95% CI: 0.41–0.79) were less likely to initiate breastfeeding early. Also, women who had a caesarean birth (AOR: 0.28, 95% CI: 0.18–0.41), delivered outside of a healthcare facility (AOR: 0.70, 95% CI: 0.50–0.99) or had twin birth (AOR: 0.43, 95% CI: 0.22–0.85) were less likely to initiate breastfeeding early. Skin-to-skin contact should be encouraged whenever possible, and women with obstetric complications should be encouraged and supported to initiate breastfeeding early. (Author)

Full URL: https://doi.org/10.1111/mcn.13449

2024-10132

The impact of a package of behaviour change interventions on breastfeeding practices in East Java Province, Indonesia. Titaley CR, Dibley MJ, Ariawan I, et al (2022), Maternal & Child Nutrition vol 18, no 3, July 2022, e13362

Suboptimal infant young child feeding practices are frequently reported globally, including in Indonesia. This analysis examined the impact of a package of behaviour change interventions on breastfeeding practices in Malang and Sidoarjo Districts, East Java Province, Indonesia. The BADUTA study (which in the Indonesian Language is an acronym for BAwah DUa TAhun, or children aged less than 2 years) was an impact evaluation using a cluster-randomized controlled trial with two parallel treatment arms. We conducted household surveys in 12 subdistricts from Malang and Sidoarjo. We collected information from 5175 mothers of children aged 0–23 months: 2435 mothers at baseline (February 2015) and 2740 mothers at endline (January to February 2017). This analysis used two indicators for fever and diarrhoea and seven breastfeeding indicators (early initiation of breastfeeding, prelacteal feeding, exclusive breastfeeding under 6 months, predominant breastfeeding, continued breastfeeding, age-appropriate breastfeeding and bottle-feeding). We used multilevel logistic regression analysis to assess the effect of the intervention. After 2 years of implementation of interventions, we observed an increased odds of exclusive breastfeeding under 6 months

(adjusted odds ratio [aOR] = 1.85; 95% confidence interval [CI]: 1.35–2.53) and age-appropriate breastfeeding (aOR = 1.39; 95% CI: 1.07–1.79) in the intervention group than in the comparison group, at the endline survey. We found significantly lower odds for prelacteal feeding (aOR = 0.52; 95% CI: 0.41–0.65) in the intervention than in the comparison group. Our findings confirmed the benefits of integrated, multilayer behaviour change interventions to promote breastfeeding practices. Further research is required to develop effective interventions to reduce bottle use and improve other breastfeeding indicators that did not change with the BADUTA intervention. (Author)

Full URL: https://doi.org/10.1111/mcn.13362

2024-10129

Influence of exclusive breastfeeding on hippocampal structure, satiety responsiveness, and weight status. Higgins RC, Keller KL, Aruma JC, et al (2022), Maternal & Child Nutrition vol 18, no 3, July 2022, e13333

Longer exclusive breastfeeding duration has been associated with differences in neural development, better satiety responsiveness, and decreased risk for childhood obesity. Given hippocampus sensitivity to diet and potential role in the integration of satiety signals, hippocampus may play a role in these relationships. We conducted a secondary analysis of 149, 7–11-year-olds (73 males) who participated in one of five studies that assessed neural responses to food cues. Hippocampal grey matter volume was extracted from structural scans using CAT12, weight status was assessed using age- and sex-adjusted body mass index (%BMIp85), and parents reported exclusive breastfeeding duration and satiety responsiveness (Children's Eating Behaviour Questionnaire). Separate path models for left and right hippocampus tested: (1) the direct effect of exclusive breastfeeding on satiety responsiveness and its indirect effect through hippocampal grey matter volume; (2) the direct effect of hippocampal grey matter volume on %BMIp85 and its indirect effect through satiety responsiveness. %BMIp85 was adjusted for maternal education, yearly income, and premature birth while hippocampal grey matter volume was adjusted for total intercranial volume, age, and study from which data were extracted. Longer exclusive breastfeeding duration was associated with greater bilateral hippocampal grey matter volumes. In addition, better satiety responsiveness and greater left hippocampal grey matter volume were both associated with lower %BMIp85. However, hippocampal grey matter volumes were not associated with satiety responsiveness. Although no relationship was found between breastfeeding and child weight status, these results highlight the potential impact of exclusive breastfeeding duration on the hippocampal structure. (Author)

Full URL: https://doi.org/10.1111/mcn.13333

2024-09934

Risk factors for self-reported insufficient milk during the first 6 months of life: A systematic review. Segura-Pérez S, Richter L, Rhodes EC, et al (2022), Maternal & Child Nutrition vol 18, suppl 3, May 2022, e13353

The objective of this systematic review was to identify multifactorial risk factors for self-reported insufficient milk (SRIM) and delayed onset of lactation (DOL). The review protocol was registered a priori in PROSPERO (ID# CDR42021240413). Of the 120 studies included (98 on SRIM, 18 on DOL, and 4 both), 37 (31%) studies were conducted in North America, followed by 26 (21.6%) in Europe, 25 (21%) in East Asia, and Pacific, 15 (12.5%) in Latin America and the Caribbean, 7 (6%) in the Middle East and North Africa, 5 (4%) in South Asia, 3 (2.5%) in Sub-Saharan Africa, and 2 (1.7%) included multiple countries. A total of 79 studies were from high-income countries, 30 from upper-middle-income, 10 from low-middle-income countries, and one study was conducted in a high-income and an upper-middle-income country. Findings indicated that DOL increased the risk of SRIM. Protective factors identified for DOL and SRIM were hospital practices, such as timely breastfeeding (BF) initiation, avoiding in-hospital commercial milk formula supplementation, and BF counselling/support. By contrast, maternal overweight/obesity, caesarean section, and poor maternal physical and mental health were risk factors for DOL and SRIM. SRIM was associated with primiparity, the mother's interpretation of the baby's fussiness or crying, and low maternal BF self-efficacy. Biomedical factors including epidural anaesthesia and prolonged stage II labour were associated with DOL. Thus, to protect against SRIM and DOL it is key to prevent unnecessary caesarean sections, implement the Baby-Friendly Ten Steps at maternity facilities, and provide BF counselling that includes baby behaviours. (Author)

Full URL: https://doi.org/10.1111/mcn.13353

2024-09923

What will it take to increase breastfeeding?. Hernández-Cordero S, Pérez-Escamilla R (2022), Maternal & Child Nutrition vol 18, suppl 3, May 2022, e13371

The introduction for the Supplement in Maternal & Child Nutrition: What will it take to increase breastfeeding? describes the contribution of each of the articles included in this Supplement to the current evidence about the major structural challenges in place to overcome to improve breastfeeding practices, as well as the evidence-based policies

and interventions that can be effective at advancing breastfeeding on a large scale to promote, protect and support breastfeeding.
Although this supplement integrates key evidence to understand what it will take to increase breastfeeding, we still have a long way to go to ensure how to effectively translate this knowledge into effective and sustainable large-scale breastfeeding programmes. More evidence is needed on how to intervene at the household level, specifically how fathers, grandparents, and other family members and friends can support breastfeeding. By the same token, it is important to conduct implementation science-based studies to better understand how to scale up breastfeeding-friendly environments at the workplace, as well as how to achieve full compliance with the WHO Code. Finally, there are inequalities in breastfeeding initiation and continuation, with different breastfeeding patterns by income country level (see Victora et al., 2016). We still need to understand how to tailor interventions to the needs of the most vulnerable groups to reduce pervasive inequities in breastfeeding practices and corresponding health and development outcomes. Lastly, a critical issue that the ongoing COVID-19 pandemic has brought to our attention, is the need for countries to be well prepared to protect, support, and promote breastfeeding when public health humanitarian emergencies arise. (Author, edited)

Full URL: https://doi.org/10.1111/mcn.13371

2024-09840

Comprehensiveness of infant formula and bottle feeding resources: A review of information from Australian healthcare organisations. Cheng H, Rossiter C, Size D, et al (2022), Maternal & Child Nutrition vol 18, no 2, April 2022, e13309

The use of infant formula is widespread internationally. In Australia, 55% of infants receive formula before 6 months of age, with higher rates among disadvantaged communities. Infant formula use can contribute to childhood overweight and obesity, through formula composition and feeding behaviours, such as adding cereal to bottles and parental feeding style. While information abounds to promote and support breastfeeding, formula-feeding parents report a paucity of advice and support; many rely on formula packaging for information. This study systematically searched and reviewed online resources for infant formula and bottle feeding from Australian governments, health services, hospitals, and not-for-profit parenting organisations. A comprehensive search strategy located 74 current resources, mostly for parents. Researchers evaluated the resources against best practice criteria derived from Australian government and UNICEF guidelines on six topics. They assessed how comprehensively the resources addressed each topic and whether the resources provided all the information necessary for parents to understand each topic. The mean 'comprehensiveness' rating for topics across all resources was 54.36%. However, some topics were addressed more fully than others. Information on 'discussing infant formula with health workers' and on 'preparing infant formula' was more frequently accurate and comprehensive. However, there was much less comprehensive information on 'using infant formula', including amounts of formula to feed, use of bottle teats, appropriate bottle-feeding practice and responsiveness to infant satiety cues. Over half the resources were written at an acceptable reading level. (Author)

Full URL: https://doi.org/10.1111/mcn.13309

2024-09798

Women's status, breastfeeding support, and breastfeeding practices in the United States. Yourkavitch J, Smith PH (2022), PLoS ONE vol 17, no 9, September 2022, e0275021

The objective of this study is to examine associations between state-level breastfeeding support and breastfeeding practices, controlling for women's status, in the U.S. We used publicly available data on state-level breastfeeding practices and support (international board-certified lactation consultants (IBCLC), births in Baby-Friendly hospitals, and La Leche League Leaders) for births in 2015 from the CDC Breastfeeding Report Card (2018) and other CDC reported data, and indicators of women's status from the Institute for Women's Policy Research reports (2015). We conducted an ecological study to estimate incidence rate ratios of exclusive breastfeeding at six months and breastfeeding at 12 months with breastfeeding supports using bivariate and multivariable Poisson regression. Political participation, poverty, and employment and earnings were associated with breastfeeding practices, as was each breastfeeding support in bivariate analyses. After controlling for women's status, only IBCLCs were positively associated with rates of exclusive breastfeeding at 6 months and continued breastfeeding at 12 months. For every additional IBCLC per 1000 live births, the rate of exclusive breastfeeding at 6 months increased by 5 percent (95% CI 1.03, 1.07) and the rate of breastfeeding at 12 months increased by 4 percent (95% CI 1.02, 1.06). Political participation, poverty, and employment and earnings were associated with breastfeeding practices, indicating a relationship between women's political and economic status and their breastfeeding practices in the U.S. Given the influence of women's status, increasing the number of IBCLCs may improve breastfeeding practices. (Author)

Full URL: https://doi.org/10.1371/journal.pone.0275021

2024-09556

Breastfeeding knowledge assessment tools among nursing and midwifery students: a systematic review. Hamdoune M, Jounaidi K (2024), British Journal of Midwifery vol 32, no 8, August 2024, pp 432–439

Background/Aims
Training nursing and midwifery students is essential to support breastfeeding reinforcement plans. Various scales have been developed to assess knowledge acquired during training. This study was conducted to explore these instruments.

Methods
A systematic review of online databases (Scopus, Web of Science, Science-Direct, Cochrane Library and PubMed) was performed. Studies published in English from 2013 were included.

Results
Five studies that used validated instruments were included in the review. An additional scale, the breastfeeding knowledge assessment form, was identified but had only been tested once. Most tools were designed to assess mothers' knowledge, and no instruments were developed for nursing and midwifery students. Factors that influenced knowledge and its acquisition among nursing and midwifery students included the lack of training courses on breastfeeding for undergraduate students.

Conclusions
There is a lack of such instruments specifically designed for nursing and midwifery students. A comprehensive training module should be included in undergraduate curricula based on WHO and the UNICEF educational requirements. (Author)

2024-09157

Influence of Breastfeeding Factors on Polyamine Content in Human Milk. Muñoz-Esparza NC, Vásquez-Garibay EM, Guzmán-Mercado E, et al (2021), Nutrients vol 13, no 9, August 2021, p 3016

The polyamine content of human breast milk, which is the first exogenous source of polyamines for the newborn, can be affected by several factors associated with the mother, the infant, or breastfeeding itself. The aim of this study was to evaluate the influence of different breastfeeding factors on the polyamines found in human milk. For this study, a cohort of 83 mothers was considered for up to 4 months, and a subgroup of 33 mothers were followed during the first six months of breastfeeding. Two breast milk samples were collected at each sampling point (foremilk and hindmilk) and the polyamine content was determined by UHPLC-FL. Polyamine levels varied considerably between the mothers and tended to decrease over time. Putrescine was the minor polyamine, whereas spermidine and spermine contents were very similar. The concentrations of the three polyamines were significantly higher in hindmilk than foremilk ($p < 0.001$). Spermidine and spermine levels decreased significantly through the lactation progress ($p < 0.05$). Finally, slightly higher levels of polyamines were observed in the milk of mothers providing partial, rather than full, breastfeeding, although the differences were not significant. The polyamine content in human milk was found to change during a single feed (foremilk versus hindmilk) and as lactation progressed, mainly in response to the specific circumstances of the newborn. (Author)

Full URL: https://doi.org/10.3390/nu13093016

2024-09117

Breastfeeding in Cystic Fibrosis: A Systematic Review on Prevalence and Potential Benefits. Colombo C, Alicandro G, Daccò V, et al (2021), Nutrients vol 13, no 9, September 2021, p 3263

Breastfeeding (BF) is considered the normative standard of feeding for all infants. However, the impact of BF in patients with cystic fibrosis (CF) is not completely defined. Therefore, we conducted a systematic review to evaluate BF prevalence in the CF population and its impact on anthropometric and pulmonary outcomes. We searched MEDLINE, Embase and the Cochrane Library for original articles published in English up to 4 December 2020 that report the prevalence of BF and/or any measure of association between BF and anthropometric or pulmonary outcomes. Nine observational studies were identified (six retrospective cohort studies, one prospective cohort study, one survey and one case–control study within a retrospective cohort). The BF rate in CF patients is lower than that of the healthy population (approximately 50–60% of infants were breastfed at any time). The benefits in anthropometric outcomes of BF for >2 months in this at-risk population are unclear. A few relatively small studies suggest a potential benefit of BF

in reducing lung infections, although data are inconsistent. The currently available data are insufficient to draw definite conclusions on the benefits of exclusive BF in anthropometric and pulmonary outcomes in CF. Clinical trials evaluating well-defined BF promotion interventions are needed. (Author)

Full URL: https://doi.org/10.3390/nu13093263

2024-09096

Stakeholders' views of the Baby Friendly Initiative implementation and impact: a mixed methods study. Fair FJ, Morison A, Soltani H (2024), International Breastfeeding Journal vol 19, no 49, July 2024

Background
The Baby Friendly Hospital Initiative (BFHI) was launched in 1991 as an intervention to support healthy infant feeding practices, but its global coverage remains around 10%. This study aimed to explore stakeholders' views of the Baby Friendly Initiative (BFI) programme, the barriers and facilitators to accreditation and its perceived impact.

Methods
A mixed methods approach was used. An online survey was distributed through numerous professional networks from September 2020 to November 2020. Quantitative data were analyzed using descriptive statistics, with simple content analysis undertaken on open-ended responses. Individual semi-structured interviews were also undertaken and analyzed using inductive thematic analysis.

Results
A total of 322 respondents completed the survey in part or in full, mainly from the United Kingdom. Fifteen key stakeholders and two maternity service users undertook interviews. Respondents were from various professional backgrounds and currently worked in different roles including direct care of women and their families, public health, education and those responsible for purchasing health services. Survey respondents viewed the BFI to have the greatest impact on breastfeeding initiation, duration, and infant health outcomes. Three overall themes were identified. The first was "BFI as an agent for change". Most participants perceived the need to implement the whole package, but views were mixed regarding its impact and the accreditation process. Secondly, BFI was regarded as only "one part of a jigsaw", with no single intervention viewed as adequate to address the complex cultural context and social and health inequities that impact breastfeeding. Finally, "cultural change and education" around breastfeeding were viewed as essential for women, staff and society.

Conclusions
The BFI is not a magic bullet intervention. To create a more supportive breastfeeding environment within society a holistic approach is required. This includes social and cultural changes, increased education ideally starting at school age, and advancing positive messaging around breastfeeding within the media, as well as fully banning breastmilk substitute advertising. Although the BFI comprises a whole package, few survey respondents rated all aspects as equally important. Additional evidence for the effectiveness of each element and the importance of the whole package need to be established and communicated. (Author)

Full URL: https://doi.org/10.1186/s13006-024-00639-8

2024-09095

Investigating factors influencing decision-making around use of breastmilk substitutes by health care professionals: a qualitative study. Islam M, Assani D, Ramlawi S, et al (2024), International Breastfeeding Journal vol 19, no 48, July 2024

Background
Breastfeeding is recognized as the gold standard of infant feeding and nutrition. The World Health Organization recommends exclusive breastfeeding (EBF) of infants for the first 6 months of life. A variety of factors may impact breastfeeding practices in-hospital which may continue after hospital discharge, such as the use of breastmilk substitutes (BMS). The Baby-Friendly Initiative (BFI), which aims to promote and support breastfeeding practices, established a target rate of 75% for EBF from birth to hospital discharge. Currently, this target is not being met at The Ottawa Hospital (TOH), indicating there is room for improvement in EBF rates. The purpose of this study is to explore health care professionals (HCP) decision-making around use of BMS and identify factors that drive the use of BMS with and without medical indications.

Methods
In this qualitative study, semi-structured interviews were conducted with HCPs within TOH from January to June 2022. All participants had experience in maternity or postpartum care and were probed on factors influencing use of BMS at

this institution. Interview transcripts were coded using an inductive approach.

Results
A total of 18 HCPs were interviewed including physicians, midwives, lactation consultants, and registered nurses. Multilevel barriers influencing the use of BMS were categorized into patient, HCP, and institution-level factors. Subthemes that emerged ranged from parental preferences, training differences amongst HCPs, to budget and staffing issues. Over half of HCPs were prepared to answer questions on EBF and were familiar with the BFI. Although most were supportive of this institution receiving BFI designation, a few providers raised concerns of its impact on parents who would like to supplement.

Conclusions
Several modifiable factors influencing decision-making for use of BMS were identified. These findings will be used to inform unit leads, help identify effective strategies to address modifiable barriers, and develop tailored breastfeeding supports to improve EBF rates. (Author)

Full URL: https://doi.org/10.1186/s13006-024-00656-7

2024-08695

Acute changes to breast milk composition following consumption of high-fat and high-sugar meals. Ward E, Yang N, Muhlhausler BS, et al (2021), Maternal & Child Nutrition vol 17, no 3, July 2021, e13168

Breast milk composition is influenced by habitual diet, yet little is known about the short-term effects of changes in maternal diet on breast milk macronutrient concentrations. Our aim was to determine the acute effect of increased consumption of sugar/fat on breast milk protein, lactose and lipids. Exclusively breastfeeding women (n = 9) were provided with a control, higher fat (+28 g fat) and higher sugar (+66 g sugar) diet over three separate days at least 1 week apart. Hourly breast milk samples were collected concurrently for the analysis of triglycerides, cholesterol, protein, and lactose concentrations. Breast milk triglycerides increased significantly following both the higher fat and sugar diet with a greater response to the higher sugar compared to control diet (mean differences of 3.05 g/dL ± 0.39 and 13.8 g/dL ± 0.39 in higher fat and sugar diets, respectively [P < 0.001]). Breast milk cholesterol concentrations increased most in response to the higher sugar diet (0.07 g/dL ± 0.005) compared to the control (0.04 g/dL) and the higher fat diet (0.05 g/dL) P < 0.005. Breast milk triglyceride and lactose concentrations increased (P < 0.001, P = 0.006), whereas protein decreased (p = 0.05) in response to the higher fat diet compared to the control. Independent of diet, there were significant variations in breast milk composition over the day; triglycerides and cholesterol concentrations were higher at end of day (P < 0.001), whereas protein and lactose concentrations peaked at Hour 10 (of 12) (P < 0.001). In conclusion, controlled short-term feeding to increase daily sugar/fat consumption altered breast milk triglycerides, cholesterol, protein and lactose. The variations observed in breast milk protein and lactose across the 12 h period is suggestive of a circadian rhythm. (Author)

Full URL: https://doi.org/10.1111/mcn.13168

2024-08424

Breastfeeding and the origins of health: Interdisciplinary perspectives and priorities. Azad MB, Nickel NC, Bode L, et al (2021), Maternal & Child Nutrition vol 17, no 2, April 2021, e13109

Breastfeeding and human milk (HM) are critically important to maternal, infant and population health. This paper summarizes the proceedings of a workshop that convened a multidisciplinary panel of researchers to identify key priorities and anticipated breakthroughs in breastfeeding and HM research, discuss perceived barriers and challenges to achieving these breakthroughs and propose a constructive action plan to maximize the impact of future research in this field. Priority research areas identified were as follows: (1) addressing low breastfeeding rates and inequities using mixed methods, community partnerships and implementation science approaches; (2) improving awareness of evidence-based benefits, challenges and complexities of breastfeeding and HM among health practitioners and the public; (3) identifying differential impacts of alternative modes of HM feeding including expressed/pumped milk, donor milk and shared milk; and (4) developing a mechanistic understanding of the health effects of breastfeeding and the contributors to HM composition and variability. Key barriers and challenges included (1) overcoming methodological limitations of epidemiological breastfeeding research and mechanistic HM research; (2) counteracting 'breastfeeding denialism' arising from negative personal breastfeeding experiences; (3) distinguishing and aligning research and advocacy efforts; and (4) managing real and perceived conflicts of interest. To advance research on breastfeeding and HM and maximize the reach and impact of this research, larger investments are needed, interdisciplinary collaboration is essential, and the scientific community must engage families and other stakeholders in research planning and knowledge translation. (Author)

Full URL: https://doi.org/10.1111/mcn.13109

2024-07978

Association of Breastfeeding for the First Six Months of Life and Autism Spectrum Disorders: A National Multi-Center Study in China. Huang S, Wang X, Sun T, et al (2021), Nutrients vol 14, no 1, December 2021, p 45

Previous studies have shown that exclusive breastfeeding is associated with lower odds of having autism spectrum disorders (ASD) in children, but data are lacking in Asian countries, especially China. This cross-sectional study of seven cities in China collected data from August 2016 to March 2017 from 6049 toddlers aged 16–30 months and their parents who responded to questionnaires. The breastfeeding status was collected via questionnaires based on recommendations from the World Health Organization. The standard procedure for screening and diagnosis was applied to identify toddlers with ASD. Among the 6049 toddlers (3364 boys [55.6%]; mean [SD] age, 22.7 [4.1] months), 71 toddlers (1.2%) were identified as ASD. The prevalence of exclusive breastfeeding, partial breastfeeding, and not breastfeeding was 48.8%, 42.2%, and 9.1%, respectively. Compared to toddlers with exclusive breastfeeding, toddlers with partial breastfeeding or without breastfeeding had higher odds of having ASD (odd ratios [OR]: 1.55, 95% confidence interval [CI]: 0.90–2.74; OR: 2.34, 95% CI: 1.10–4.82). We did not find significant modification of demographic characteristics on the associations. The results remained robust in multiple sensitivity analyses. Toddlers without breastfeeding for the first six months of life had higher odds of having ASD, and our findings shed light on the necessity of strengthening public health efforts to increase exclusive breastfeeding in China. (Author)

Full URL: https://doi.org/10.3390/nu14010045

2024-07967

Total Fatty Acid and Polar Lipid Species Composition of Human Milk. Ahmed TB, Eggesbø M, Criswell R, et al (2021), Nutrients vol 14, no 1, December 2021, p 158

Human milk lipids are essential for infant health. However, little is known about the relationship between total milk fatty acid (FA) composition and polar lipid species composition. Therefore, we aimed to characterize the relationship between the FA and polar lipid species composition in human milk, with a focus on differences between milk with higher or lower milk fat content. From the Norwegian Human Milk Study (HUMIS, 2002–2009), a subset of 664 milk samples were analyzed for FA and polar lipid composition. Milk samples did not differ in major FA, phosphatidylcholine, or sphingomyelin species percentages between the highest and lowest quartiles of total FA concentration. However, milk in the highest FA quartile had a lower phospholipid-to-total-FA ratio and a lower sphingomyelin-to-phosphatidylcholine ratio than the lowest quartile. The only FAs associated with total phosphatidylcholine or sphingomyelin were behenic and tridecanoic acids, respectively. Milk FA and phosphatidylcholine and sphingomyelin species containing these FAs showed modest correlations. Associations of arachidonic and docosahexaenoic acids with percentages of phosphatidylcholine species carrying these FAs support the conclusion that the availability of these FAs limits the synthesis of phospholipid species containing them. (Author)

Full URL: https://doi.org/10.3390/nu14010158

2024-07882

Assessment of Maternal Macular Pigment Optical Density (MPOD) as a Potential Marker for Dietary Carotenoid Intake during Lactation in Humans. Al-Hassan AM, Vyas R, Zhang Y, et al (2022), Nutrients vol 14, no 1, January 2022, p 182

Pregnancy and lactation can change the maternal nutrient reserve. Non-invasive, quantitative markers of maternal nutrient intake could enable personalized dietary recommendations that improve health outcomes in mothers and infants. Macular pigment optical density (MPOD) is a candidate marker, as MPOD values generally reflect carotenoid intake. We evaluated the association of MPOD with dietary and breastmilk carotenoids in postpartum women. MPOD measurements and dietary intake of five carotenoids were obtained from 80 mothers in the first three months postpartum. Breastmilk samples from a subset of mothers were analyzed to determine their nutrient composition. The association between MPOD and dietary or breastmilk carotenoids was quantitatively assessed to better understand the availability and mobilization of carotenoids. Our results showed that dietary α-carotene was positively correlated with MPOD. Of the breastmilk carotenoids, 13-cis-lutein and trans-lutein were correlated with MPOD when controlled for the total lutein in breastmilk. Other carotenoids in breastmilk were not associated with MPOD. Maternal MPOD is positively correlated with dietary intake of α-carotene in the early postpartum period, as well as with the breastmilk content of lutein. MPOD may serve as a potential marker for the intake of carotenoids, especially α-carotene, in mothers in the early postpartum period. (Author)

Full URL: https://doi.org/10.3390/nu14010182

2024-07644

The Viable Microbiome of Human Milk Differs from the Metataxonomic Profile. Stinson LF, Trevenen ML, Geddes DT (2021), Nutrients vol 13, no 12, December 2021, p 4445

Bacteria in human milk contribute to the establishment of the infant gut microbiome. As such, numerous studies have characterized the human milk microbiome using DNA sequencing technologies, particularly 16S rRNA gene sequencing. However, such methods are not able to differentiate between DNA from viable and non-viable bacteria. The extent to which bacterial DNA detected in human milk represents living, biologically active cells is therefore unclear. Here, we characterized both the viable bacterial content and the total bacterial DNA content (derived from viable and non-viable cells) of fresh human milk (n = 10). In order to differentiate the living from the dead, a combination of propidium monoazide (PMA) and full-length 16S rRNA gene sequencing was used. Our results demonstrate that the majority of OTUs recovered from fresh human milk samples (67.3%) reflected DNA from non-viable organisms. PMA-treated samples differed significantly in their bacterial composition compared to untreated samples (PERMANOVA $p < 0.0001$). Additionally, an OTU mapping to Cutibacterium acnes had a significantly higher relative abundance in PMA-treated (viable) samples. These results demonstrate that the total bacterial DNA content of human milk is not representative of the viable human milk microbiome. Our findings raise questions about the validity of conclusions drawn from previous studies in which viability testing was not used, and have broad implications for the design of future work in this field. (Author)

Full URL: https://doi.org/10.3390/nu13124445

2024-07632

Multifunctional Benefits of Prevalent HMOs: Implications for Infant Health. Hill DR, Chow JM, Buck RH (2021), Nutrients vol 13, no 10, September 2021, p 3364

Breastfeeding is the best source of nutrition during infancy and is associated with a broad range of health benefits. However, there remains a significant and persistent need for innovations in infant formula that will allow infants to access a wider spectrum of benefits available to breastfed infants. The addition of human milk oligosaccharides (HMOs) to infant formulas represents the most significant innovation in infant nutrition in recent years. Although not a direct source of calories in milk, HMOs serve as potent prebiotics, versatile anti-infective agents, and key support for neurocognitive development. Continuing improvements in food science will facilitate production of a wide range of HMO structures in the years to come. In this review, we evaluate the relationship between HMO structure and functional benefits. We propose that infant formula fortification strategies should aim to recapitulate a broad range of benefits to support digestive health, immunity, and cognitive development associated with HMOs in breastmilk. We conclude that acetylated, fucosylated, and sialylated HMOs likely confer important health benefits through multiple complementary mechanisms of action. (Author)

Full URL: https://doi.org/10.3390/nu13103364

2024-07605

Latching Medical Students onto a Virtual Breastfeeding Elective during the COVID-19 Pandemic. Lam SK, MacWilliams J, Larkin-Baker LC, et al (2024), Breastfeeding Medicine vol 19, no 7, July 2024, pp 560–567

Objectives: To describe the implementation of a successful two-week virtual breastfeeding elective for medical students during the COVID-19 pandemic and characterize student demographics, objective knowledge, and perspectives on breastfeeding before and after the elective.

Study Design: We adapted the Santa Rosa Kaiser Permanente Family Medicine breastfeeding residency curriculum to create a two-week virtual medical student elective using Kern's six steps of curriculum development and a competency-based education framework. Educational components included self-paced modules, shadowing experiences, and group didactics. Objective knowledge was assessed with multiple-choice tests before and after the elective compared using a paired t-test. Reflective writing pieces were qualitatively analyzed using the six phases of thematic analysis developed by Braun and Clarke.

Results: From 2020 to 2023, 40 medical students completed the elective. Breastfeeding knowledge increased significantly from the pre-test 72% (95% CI: 52–92%) to post-test 91% (95% CI: 81–100%) ($p < 0.001$). Over 90% of students felt that learning objectives were met well or very well and agreed or strongly agreed that the elective increased their knowledge and confidence in providing anticipatory guidance to breastfeeding parents. Similar themes were shared across students' reflective writing pieces, with nearly 30% (n = 23) of the student essays addressing socio-cultural and racial differences in beliefs surrounding breastfeeding. (Author)

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2024-06780

Human Milk Virome Analysis: Changing Pattern Regarding Mode of Delivery, Birth Weight, and Lactational Stage. Dinleyici M, Pérez-Brocal V, Arslanoglu S, et al (2021), Nutrients vol 13, no 6, May 2021, p 1779

The human milk (HM) microbiota is a significant source of microbes that colonize the infant gut early in life. The aim of this study was to compare transient and mature HM virome compositions, and also possible changes related to the mode of delivery, gestational age, and weight for gestational age. Overall, in the 81 samples analyzed in this study, reads matching bacteriophages accounted for 79.5% (mainly Podoviridae, Myoviridae, and Siphoviridae) of the reads, far more abundant than those classified as eukaryotic viruses (20.5%, mainly Herpesviridae). In the whole study group of transient human milk, the most abundant families were Podoviridae and Myoviridae. In mature human milk, Podoviridae decreased, and Siphoviridae became the most abundant family. Bacteriophages were predominant in transient HM samples (98.4% in the normal spontaneous vaginal delivery group, 92.1% in the premature group, 89.9% in the C-section group, and 68.3% in the large for gestational age group), except in the small for gestational age group (only ~45% bacteriophages in transient HM samples). Bacteriophages were also predominant in mature HM; however, they were lower in mature HM than in transient HM (71.7% in the normal spontaneous vaginal delivery group, 60.8% in the C-section group, 56% in the premature group, and 80.6% in the large for gestational age group). Bacteriophages still represented 45% of mature HM in the small for gestational age group. In the transient HM of the normal spontaneous vaginal delivery group, the most abundant family was Podoviridae; however, in mature HM, Podoviridae became less prominent than Siphoviridae. Myoviridae was predominant in both transient and mature HM in the premature group (all C-section), and Podoviridae was predominant in transient HM, while Siphoviridae and Herpesviridae were predominant in mature HM. In the small for gestational age group, the most abundant taxa in transient HM were the family Herpesviridae and a species of the genus Roseolovirus. Bacteriophages constituted the major component of the HM virome, and we showed changes regarding the lactation period, preterm birth, delivery mode, and birth weight. Early in life, the HM virome may influence the composition of an infant's gut microbiome, which could have short- and long-term health implications. Further longitudinal mother–newborn pair studies are required to understand the effects of these variations on the composition of the HM and the infant gut virome. (Author)

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2024-06779

Consumption of Breast Milk Is Associated with Decreased Prevalence of Autism in Fragile X Syndrome. Westmark CJ (2021), Nutrients vol 13, no 6, May 2021, p 1785

Breastfeeding is associated with numerous health benefits, but early life nutrition has not been specifically studied in the neurodevelopmental disorder fragile X syndrome (FXS). Herein, I evaluate associations between the consumption of breast milk during infancy and the prevalence of autism, allergies, diabetes, gastrointestinal (GI) problems and seizures in FXS. The study design was a retrospective survey of families enrolled in the Fragile X Online Registry and Accessible Research Database (FORWARD). There was a 1.7-fold reduction in the prevalence of autism in FXS participants who were fed breast milk for 12 months or longer. There were strong negative correlations between increased time the infant was fed breast milk and the prevalence of autism and seizures and moderate negative correlations with the prevalence of GI problems and allergies. However, participants reporting GI problems or allergies commenced these comorbidities significantly earlier than those not fed breast milk. Parsing the data by sex indicated that males exclusively fed breast milk exhibited decreased prevalence of GI problems and allergies. These data suggest that long-term or exclusive use of breast milk is associated with reduced prevalence of key comorbidities in FXS, although breast milk is associated with the earlier development of GI problems and allergies. (Author)

Full URL: https://doi.org/10.3390/nu13061785

2024-06777

The Breast Milk Immunoglobulinome. Rio-Aige K, Azagra-Boronat I, Castell M, et al (2021), Nutrients vol 13, no 6, May 2021, p 1810

Breast milk components contribute to the infant's immune development and protection, and among other immune factors, immunoglobulins (Igs) are the most studied. The presence of IgA in milk has been known for a long time; however, less information is available about the presence of other Igs such as IgM, IgG, and their subtypes (IgG1, IgG2, IgG3, and IgG4) or even IgE or IgD. The total Ig concentration and profile will change during the course of lactation; however, there is a great variability among studies due to several variables that limit establishing a clear pattern. In this context, the aim of this review was firstly to shed light on the Ig concentration in breast milk based on scientific evidence and secondly to study the main factors contributing to such variability. A search strategy provided only 75 studies with the prespecified eligibility criteria. The concentrations and proportions found have been established based on the intrinsic factors of the study—such as the sampling time and quantification technique—as well as

participant-dependent factors, such as lifestyle and environment. All these factors contribute to the variability of the immunoglobulinome described in the literature and should be carefully addressed for further well-designed studies and data interpretation. (Author)

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2024-06742

Human Milk Oligosaccharide Profiles over 12 Months of Lactation: The Ulm SPATZ Health Study. Siziba LP, Mank M, Stahl B, et al (2021), Nutrients vol 13, no 6, June 2021, p 1973

Human milk oligosaccharides (HMOs) have specific dose-dependent effects on child health outcomes. The HMO profile differs across mothers and is largely dependent on gene expression of specific transferase enzymes in the lactocytes. This study investigated the trajectories of absolute HMO concentrations at three time points during lactation, using a more accurate, robust, and extensively validated method for HMO quantification. We analyzed human milk sampled at 6 weeks (n = 682), 6 months (n = 448), and 12 months (n = 73) of lactation in a birth cohort study conducted in south Germany, using label-free targeted liquid chromatography mass spectrometry (LC-MS2). We assessed trajectories of HMO concentrations over time and used linear mixed models to explore the effect of secretor status and milk group on these trajectories. Generalized linear model-based analysis was used to examine associations between HMOs measured at 6 weeks of lactation and maternal characteristics. Results: Overall, 74%, 18%, 7%, and 1% of human milk samples were attributed to milk groups I, II, III, and IV, respectively. Most HMO concentrations declined over lactation, but some increased. Cross-sectionally, HMOs presented high variations within milk groups and secretor groups. The trajectories of HMO concentrations during lactation were largely attributed to the milk group and secretor status. None of the other maternal characteristics were associated with the HMO concentrations. The observed changes in the HMO concentrations at different time points during lactation and variations of HMOs between milk groups warrant further investigation of their potential impact on child health outcomes. These results will aid in the evaluation and determination of adequate nutrient intakes, as well as further (or future) investigation of the dose-dependent impact of these biological components on infant and child health outcomes. (Author)

Full URL: https://doi.org/10.3390/nu13061973

2024-06739

Free and Total Amino Acids in Human Milk in Relation to Maternal and Infant Characteristics and Infant Health Outcomes: The Ulm SPATZ Health Study. van Sadelhoff JHJ, Siziba LP, Buchenauer L, et al (2021), Nutrients vol 13, no 6, June 2021, p 2009

Free amino acids (FAAs) are important regulators of key pathways necessary for growth, development, and immunity. Data on FAAs in human milk (HM) and their roles in infant development are limited. We investigated the levels of FAAs and total amino acids (TAA, i.e., the sum of conjugated amino acids and FAAs) in HM in relation to infant and maternal characteristics and immunological conditions. FAA and TAA levels in HM sampled at 6 weeks (n = 671) and 6 months (n = 441) of lactation were determined using high-performance liquid chromatography. Child growth was ascertained at 4–5 weeks and at 6–7 months of age. Child allergy and lower respiratory tract infections were assessed in the first years of life. Associations of amino acid (AA) levels in HM with child growth and health outcomes were determined by Spearman correlation and modified Poisson regression, respectively. Free glutamine, glutamate, and serine in 6-week HM positively correlated with infant weight gain in the first 4–5 weeks of age. Maternal pre-pregnancy weight and body mass index (BMI) were negatively correlated with free glutamine and asparagine in 6-week and 6-month HM and positively correlated with the sum of TAAs in 6-month HM, but significance was lost following confounder adjustment. Free glutamine was lower in 6-month HM of mothers with an allergy (either active or non-active). No consistent associations were found between FAAs in HM and child health outcomes. However, potential negative associations were observed between specific FAAs and the risk of food allergy. These results suggest that specific FAAs play a role in infant growth. Moreover, these findings warrant further investigations into the relation of FAAs in HM with infant health outcomes and maternal allergy. (Author)

Full URL: https://doi.org/10.3390/nu13062009

2024-06705

High confidence, yet poor knowledge of infant feeding recommendations among adults in Nova Scotia, Canada. Chan K, Whitfield KC (2020), Maternal & Child Nutrition vol 16, no 2, April 2020, e12903

In Canada, adherence to the national 'Nutrition for Healthy Term Infants' recommendations of infant and young child feeding (IYCF; 0-24 months) is suboptimal. While maternal knowledge of IYCF is commonly assessed, that of the general public has rarely been explored. Our objective was to assess the knowledge of, and confidence in answers to,

Canadian IYCF recommendations among a diverse sample of adults in Nova Scotia, Canada. Between March and May 2018, a self-administered questionnaire examining IYCF knowledge, self-rated confidence, and sociodemographic information was conducted among Nova Scotians (≥19 years) in public locations. We surveyed 229 adults; 60% (n=134) were women. Mean (95% CI) age was 44 (41,46) years, 73% self-identified as white, 77% were born in Canada, and 69% were parents. Knowledge deficits were: age to terminate breastfeeding (18.3 (16.7,19.9) months; recommendation: ≥24 months), age to introduce solids (9.2 (8.2,10.2) months; recommendation: 6 months), vitamin D supplementation (10% correct), and optimal complementary foods (only 37% indicated iron-rich foods). Correct IYCF knowledge was lower among men, non-parents, young adults (19-29 years) and low-income adults (<$50,000/year). Mean self-rated confidence (out of 10) was high (7.2 (6.9,7.5)), and not different (p>0.05) between correct and incorrect responses for: best food for a newborn, age to terminate any breastfeeding, and age to start family meal foods. We found low knowledge of IYCF guidelines, yet high confidence in responses regardless of accuracy, among adults in Nova Scotia. General public knowledge deficits may contribute to an unsupportive culture around IYCF practices and low adherence to current recommendations. (Author)

Full URL: https://doi.org/10.1111/mcn.12903

2024-06561

Does early introduction of solid feeding lead to early cessation of breastfeeding?. Lessa A, Garcia AL, Emmett P, et al (2020), Maternal & Child Nutrition vol 16, no 4, October 2020, e12944

Mixed milk feeding increases the likelihood of breastfeeding cessation, but it is not known if solid feeding (SF) has the same effect. We have identified 10,407 infants breastfed for at least 8–10 weeks from three large U.K. studies (Avon Longitudinal Study of Parents and Children [ALSPAC; born 1990–1991], Southampton Woman's Survey [SWS; 1998–2008], and Infant Feeding Survey 2010 [IFS 2010]) to investigate the associations between early SF and breastfeeding cessation. In the earliest study (ALSPAC), 67% had started SF before the age of 4 months, but in the latest (IFS), only 23% had started before 4 months. Solid food introduction before 4 months was associated with stopping breastfeeding before 6 months in all three cohorts, with little effect of adjustment for maternal sociodemographic characteristics (Poisson regression, adjusted prevalence ratios: ALSPAC 1.55, [95% confidence interval 1.4, 1.8], SWS 1.13 [1.0, 1.3], IFS 1.10 [1.1, 1.3]). Using Cox regression, adjusted hazard ratios for breastfeeding cessation compared with SF after 5 months were 2.07 (1.8, 2.4) for SF before 4 and 1.51 (1.3, 1.8) at 4–5 months for ALSPAC and 1.25 (1.1, 1.5) and 1.15 (1.0, 1.3) for SWS. Earlier introduction of solids was associated with a shorter duration of breastfeeding, particularly in cohorts where earlier introduction of solids was the norm, with a dose–response relationship, which was not explained by background social characteristics. As mothers most commonly introduced solids in the month prior to the then recommended age, continuing to recommend deferring solids to the age of 6 months is important to support sustained breastfeeding. (Author)

Full URL: https://doi.org/10.1111/mcn.12944

2024-06474

What influences child feeding in the Northern Triangle? A mixed-methods systematic review. Deeney M, Harris-Fry H (2020), Maternal & Child Nutrition vol 16, no 4, October 2020, e13018

Optimising child feeding behaviours could improve child health in Guatemala, Honduras and El Salvador, where undernutrition rates remain high. However, the design of interventions to improve child feeding behaviours is limited by piecemeal, theoretically underdeveloped evidence on factors that may influence these behaviours. Between July 2018 and January 2020, we systematically searched Cochrane, Medline, EMBASE, Global Health and LILACS databases, grey literature websites and reference lists, for evidence of region-specific causes of child feeding behaviours and the effectiveness of related interventions and policies. The Behaviour Change Wheel was used as a framework to synthesise and map the resulting literature. We identified 2,905 records and included 68 relevant studies of mixed quality, published between 1964 and 2019. Most (n = 50) were quantitative, 15 were qualitative and three used mixed methods. A total of 39 studies described causes of child feeding behaviour; 29 evaluated interventions or policies. Frequently cited barriers to breastfeeding included mothers' beliefs and perceptions of colostrum and breast milk sufficiency; fears around child illness; and familial and societal pressures, particularly from paternal grandmothers. Child diets were influenced by similar beliefs and mothers' lack of money, time and control over household finances and decisions. Interventions (n = 22) primarily provided foods or supplements with education, resulting in mixed effects on breastfeeding and child diets. Policy evaluations (n = 7) showed positive and null effects on child feeding practices. We conclude that interventions should address context-specific barriers to optimal feeding behaviours, use behaviour change theory to apply appropriate techniques and evaluate impact using robust research methods. (Author)

Full URL: https://doi.org/10.1111/mcn.13018

2024-06311

The significance of early breastfeeding experiences on breastfeeding self-efficacy one week postpartum. Nilsson IMS, Kronborg H, Rahbek K, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12986

Many new mothers do not reach their breastfeeding goals. Breastfeeding self-efficacy is a modifiable determinant influenced by prior and new breastfeeding experiences. More knowledge about factors associated with early breastfeeding experiences and breastfeeding self-efficacy would allow us to qualify breastfeeding counselling and increase breastfeeding duration. This study aimed to identify prevalence and factors associated with early negative breastfeeding experience, low breastfeeding self-efficacy in the first week postpartum, and drop in self-efficacy from late pregnancy to early postpartum period. A prospective longitudinal study was performed in Denmark from 2013 to 2014, including 2,804 mothers.

Results showed that 1 week postpartum almost 10% of mothers had negative breastfeeding experiences, 36% had low breastfeeding self-efficacy, and 26% drop in self-efficacy from pregnancy. Negative breastfeeding experiences were significantly associated with epidural analgesia, interrupted skin-to-skin contact immediately postpartum, short previous breastfeeding duration, and lacking social support. Low breastfeeding self-efficacy was associated with low breastfeeding intention, short previous breastfeeding duration, and negative breastfeeding experiences in the first week postpartum. Finally, significant associations of drop in breastfeeding self-efficacy from late pregnancy were no or short education, early negative breastfeeding experiences, prior short breastfeeding duration, and low general breastfeeding self-efficacy in pregnancy. Negative breastfeeding experiences in the first week postpartum is crucial for maternal breastfeeding self-efficacy 1 week following birth. It is important to identify and support mothers at risk of negative breastfeeding experiences in the first week following birth and address factors that might increase the probability of early successful breastfeeding experiences. (Author)

Full URL: https://doi.org/10.1111/mcn.12986

2024-06153

Vulnerable mothers' experiences breastfeeding with an enhanced community lactation support program. Francis J, Mildon A, Stewart S, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12957

The Canada Prenatal Nutrition Program (CPNP) provides a variety of health and nutrition supports to vulnerable mothers and strongly promotes breastfeeding but does not have a formal framework for postnatal lactation support. Breastfeeding duration and exclusivity rates in Canada fall well below global recommendations, particularly among socially and economically vulnerable women. We aimed to explore CPNP participant experiences with breastfeeding and with a novel community lactation support program in Toronto, Canada that included access to certified lactation consultants and an electric breast pump, if needed. Four semistructured focus groups and 21 individual interviews (n = 46 women) were conducted between September and December 2017. Data were analysed using inductive thematic analysis. Study participants reported a strong desire to breastfeed but a lack of preparation for breastfeeding-associated challenges. Three main challenges were identified by study participants: physical (e.g., pain and low milk supply), practical (e.g., cost of breastfeeding support and maternal time pressures), and breastfeeding self-efficacy (e.g., concern about milk supply and conflicting information). Mothers reported that the free lactation support helped to address breastfeeding challenges. In their view, the key element of success with the new program was the in-home visit by the lactation consultant, who was highly skilled and provided care in a non-judgmental manner. They reported this support would have been otherwise unavailable due to cost or travel logistics. This study suggests value in exploring the addition of postnatal lactation support to the well-established national CPNP as a means to improve breastfeeding duration and exclusivity among vulnerable women. (Author)

Full URL: https://doi.org/10.1111/mcn.12957

2024-06152

The effect of a combined intervention on exclusive breastfeeding in primiparas: A randomised controlled trial. Puharić D, Malički M, Borovac JA, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12948

An antenatal/postnatal intervention involving proactive telephone support and written materials was conducted among primiparas. Four hundred women, from the Split-Dalmatia County, Croatia, were randomized between November 2013 and December 2016 into three groups: intervention (IG), active control (ACG) and standard care (SCG). Primary outcome was exclusive breastfeeding (EBF) at 3 months. Secondary outcomes included breastfeeding difficulties, attitudes towards infant feeding, breastfeeding self-efficacy and social support. Practice staff were blinded to group allocation. Of 400 women, 45 (11%) were lost to follow-up, and final analyses were conducted on 129 (IG), 103

(ACG) and 123 (SCG) participants. EBF rates at 3 months were significantly higher for the IG (odds ratio [OR] 4.6, 95% confidence interval [CI], 2.7 to 8.1; EBF 81%) as well as at 6 months (OR 15.7, 95% CI, 9.1 to 27.1; EBF 64%) compared with SCG (EBF 47% at 3 months and 3% at 6 months). Higher rates were also observed for the ACG at 3 months (OR 2.2, 95% CI, 1.3 to 3.8, EBF 68%) and 6 months (OR 2.3, 95% CI, 1.4 to 3.9, EBF 16%). Participants in the IG had the highest increase in positive attitudes towards infant feeding, in comparison to baseline, and significantly higher breastfeeding self-efficacy. Participants in SCG experienced significantly more breastfeeding difficulties, both at 3 and 6 months, in comparison to AC and IGs. Written breastfeeding materials and proactive telephone support among primiparas are an effective means of increasing breastfeeding rates, decreasing breastfeeding difficulties and improving self-efficacy and attitudes towards infant feeding. (Author)

Full URL: https://doi.org/10.1111/mcn.12948

2024-06151

Breastfeeding initiation or duration and longitudinal patterns of infections up to 2 years and skin rash and respiratory symptoms up to 8 years in the EDEN mother–child cohort. Davisse-Paturet C, Adel-Patient K, Forhan A, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12935

This paper aimed to examine the effect of breastfeeding on longitudinal patterns of common infections up to 2 years and respiratory symptoms up to 8 years. To assess the incidence and reoccurrence of infections and allergic symptoms in the first years of life among 1,603 children from the EDEN mother–child cohort, distinct longitudinal patterns of infectious diseases as well as skin rash and respiratory symptoms were identified by group-based trajectory modelling. To characterize infections, we considered the parent-reported number of cold/nasopharyngitis and diarrhoea from birth to 12 months and otitis and bronchitis/bronchiolitis from birth to 2 years. To characterize allergy-related symptoms, we considered the parent-reported occurrence of wheezing and skin rash from 8 months to 8 years and asthma from 2 to 8 years. Then associations between breastfeeding and these longitudinal patterns were assessed through adjusted multinomial logistic regression. Compared with never-breastfed infants, ever-breastfed infants were at a lower risk of diarrhoea events in early infancy as well as infrequent events of bronchitis/bronchiolitis throughout infancy. Only predominant breastfeeding duration was related to frequent events of bronchitis/bronchiolitis and infrequent events of otitis. We found no significant protective effect of breastfeeding on longitudinal patterns of cold/nasopharyngitis, skin rash, or respiratory symptoms. For an infant population with a short breastfeeding duration, on average, our study confirmed a protective effect of breastfeeding on diarrhoea events in early infancy, infrequent bronchitis/bronchiolitis and, to a lesser extent, infrequent otitis events up to 2 years but not on other infections, skin rash, or respiratory symptoms. (Author)

Full URL: https://doi.org/10.1111/mcn.12935

2024-06149

Professional and non-professional sources of formula feeding advice for parents in the first six months. Appleton J, Fowler C, Laws R, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12942

Breastfeeding is beneficial to both the mother and infant, yet many infants are either partially or fully fed with formula milk. Those parents feeding with formula receive less support from professional sources than those breastfeeding and may rely on more non-professional sources for advice, and this contributes to negative emotional experiences such as guilt. This paper explores the sources of advice for formula feeding, factors associated with using professional or non-professional sources and compares these sources with those used for breastfeeding advice. A secondary analysis of Australian survey data from 270 mothers was performed. Mothers of six-month-old infants participated in an online survey, providing information on advice they received or read about formula feeding and/or breastfeeding from professional and non-professional sources. A fifth of mothers who were formula feeding did not receive any formula feeding advice from professional sources, and only a small fraction (4.5%) of mothers breastfeeding did not received any breastfeeding advice from professional sources. Compared with those mothers breastfeeding receiving breastfeeding advice, fewer mothers formula feeding receive formula feeding advice from both professional and non-professional sources. The tin of formula was the most used source of formula advice. Mothers feeding with formula at six months were more likely to have received formula feeding advice from professional sources if they had been fully formula feeding before their infant was under the age of three months. Further research is needed to understand the specific barriers to accessing formula feeding advice and what other factors influence access to formula feeding advice. (Author)

Full URL: https://doi.org/10.1111/mcn.12942

2024-06039

Breastfeeding and childhood obesity: A 12-country study. Ma J, Qiao Y, Zhao P, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12984

This study aimed to examine the association between breastfeeding and childhood obesity. A multinational cross-sectional study of 4,740 children aged 9–11 years was conducted from 12 countries. Infant breastfeeding was recalled by parents or legal guardians. Height, weight, waist circumference, and body fat were obtained using standardized methods. The overall prevalence of obesity, central obesity, and high body fat were 12.3%, 9.9%, and 8.1%, respectively. After adjustment for maternal age at delivery, body mass index (BMI), highest maternal education, history of gestational diabetes, gestational age, and child's age, sex, birth weight, unhealthy diet pattern scores, moderate-to-vigorous physical activity, sleeping, and sedentary time, exclusive breastfeeding was associated with lower odds of obesity (odds ratio [OR] 0.76, 95% confidence interval, CI [0.57, 1.00]) and high body fat (OR 0.60, 95% CI [0.43, 0.84]) compared with exclusive formula feeding. The multivariable-adjusted ORs based on different breastfeeding durations (none, 1–6, 6–12, and > 12 months) were 1.00, 0.74, 0.70, and 0.60 for obesity (Ptrend = .020) and 1.00, 0.64, 047, and 0.64 for high body fat (Ptrend = .012), respectively. These associations were no longer significant after adjustment for maternal BMI. Breastfeeding may be a protective factor for obesity and high body fat in 9- to 11-year-old children from 12 countries. (Author)

Full URL: https://doi.org/10.1111/mcn.12984

2024-05837

Parity, lactation, and long-term weight change in Mexican women. Mazariegos M, Ortiz-Panozo E, González de Cosío T, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12988

One post-partum behaviour that may be protective against post-partum weight retention and long-term weight gain among women of reproductive age is lactation because of its potential role in resetting maternal metabolism after pregnancy. However, most of the evidence focuses on weight retention at 6, 12, or 24 months post-partum, and data beyond 2 years after birth are sparse, and findings are inconclusive. Therefore, our aim was to assess the association of parity and mean duration of lactation per child with long-term weight change in Mexican women. We assessed the association of parity and mean duration of lactation per child with long-term weight change in 75,421 women from the Mexican Teachers' Cohort. Several multivariable regression models were fit to assess these associations. We also examined the non-linear association between duration of lactation and weight change using restricted cubic splines. We found that parous women (≥4 children) gained 2.81 kg more (95% CI [2.52, 3.10]) than did nulliparous women. The association between mean duration of lactation per child and weight change appeared to be non-linear. Women who breastfed on average 3–6 months per child had lower gain weight (−1.10, 95% CI [−1.58, −0.47 kg]) than had women who did not breastfeed. This association was linear up to 6 months of lactation per child. Our findings suggest that parity alters weight-gain trajectory in women and that lactation could reduce this alteration. These findings are important in the prevention of excessive weight gain through reproductive years and their future health implications. (Author)

Full URL: https://doi.org/10.1111/mcn.12988

2024-05663

Social representations of breastfeeding in health science students: a first step to strengthening their training. Grover-Baltazar GA, Sandoval-Rodríguez A, Macedo-Ojeda G, et al (2024), Nurse Education in Practice vol 78, July 2024, 103991

Aim

This study aims to describe the social representations of breastfeeding among Mexican health science students.

Background

Breastfeeding is a complex phenomenon involving biological, affective and sociocultural aspects. Its definition includes diverse beliefs, attitudes, traditions and myths. Being aware of the connections between biological and sociocultural concepts in the social representations of breastfeeding in health science students may facilitate our comprehension of their attitudes/behaviors towards breastfeeding.

Design

A qualitative study was carried out based on the structuralist approach of the social representations theory.

Methods

Data were collected with free-listing questionnaires with breastfeeding as an inducer word among a random sample of nutrition, medical and nursing undergraduate students (n=124). The analyses used were similitude/meanings of words, prototypical and categorical analyses.

Results
The findings suggest that the structure of the social representation is composed of breastfeeding essentials (baby, mother, & milk), affective (attachment, love & link), biological (nutrition, breasts, & health) and sociocultural elements (taboo, responsibility, & economic). Only instrumental elements are found in the nucleus, whereas biological, affective and sociocultural elements are observed in the peripheries. Moreover, emerging thematic categories such as the "affective bond" and "feeding" introduced additional dimensions, thereby emphasizing the complexity and richness of the social representation of breastfeeding in the context of health science students.

Conclusions
The structure of the social representation of breastfeeding among some Mexican undergraduate health science students focuses on the instrumental aspects, emphasizing essential elements. However, they downplay more scientifically oriented elements specific to their academic training. These findings, when extrapolated to different contexts, present an opportunity that could assist the development of tailored and culturally adapted educational strategies to strengthen breastfeeding training for health students. This approach can significantly contribute to enhancing breastfeeding promotion in society by addressing practical, scientific and language-inclusive aspects in the training of health professionals. (Author)

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2024-05446

Breastfeeding beliefs and experiences of African immigrant mothers in high-income countries: A systematic review. Odeniyi AO, Embleton N, Ngongalah L, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12970

Breastfeeding provides optimal nutrition for the healthy growth of infants and is associated with reduced risks of infectious diseases, child and adult obesity, type 2 diabetes, and other chronic diseases. Migration has been shown to influence breastfeeding especially among migrants from low-and-middle-income countries. This mixed-methods systematic review aimed to identify, synthesise, and appraise the international literature on the breastfeeding knowledge and experiences of African immigrant mothers residing in high-income countries. MEDLINE, CINAHL, Embase, PsychINFO, Scopus, and Web of Knowledge databases were searched from their inception to February 2019. Grey literature, reference, and citation searches were carried out and relevant journals hand-searched. Data extraction and quality assessment were independently carried out by two reviewers. An integrated mixed-methods approach adopting elements of framework synthesis was used to synthesise findings. The initial searches recovered 8,841 papers, and 35 studies were included in the review. Five concepts emerged from the data: (a) breastfeeding practices, showing that 90% of African mothers initiated breastfeeding; (b) knowledge, beliefs, and attitudes, which were mostly positive but included a desire for bigger babies; (c) influence of socio-demographic, economic, and cultural factors, leading to early supplementation; (d) support system influencing breastfeeding rates and duration; and (e) perception of health professionals who struggled to offer support due to culture and language barriers. African immigrant mothers were positive about breastfeeding and willing to adopt best practice but faced challenges with cultural beliefs and lifestyle changes after migration. African mothers may benefit from more tailored support and information to improve exclusive breastfeeding rates. (Author)

Full URL: https://doi.org/10.1111/mcn.e12970

2024-05442

Development of LactaPedia: A lactation glossary for science and medicine. Boss M, Hartmann P, Turner J, et al (2020), Maternal & Child Nutrition vol 16, no 3, July 2020, e12969

During the last decade, there have been several publications highlighting the need for consistent terminology in breastfeeding research. Standard terms and definitions are essential for the comparison and interpretation of scientific studies that, in turn, support evidence-based education, consistency of health care, and breastfeeding policy. Inconsistent advice is commonly reported by mothers to contribute to early weaning. A standard language is the fundamental starting point required for the provision of consistent advice. LactaPedia (www.lactapedia.com) is a comprehensive lactation glossary of over 500 terms and definitions created during the development of LactaMap (www.lactamap.com), an online lactation care support system. This paper describes the development of LactaPedia, a website that is accessible free of charge to anyone with access to the Internet. Multiple methodological frameworks were incorporated in LactaPedia's development in order to meet the needs of a glossary to support both consistent health care and scientific research. The resulting LactaPedia methodology is a six-stage process that was developed inductively and includes framework to guide vetting and extension of its content using public feedback via discussion forums. The discussion forums support ongoing usability and refinement of the glossary. The development of

LactaPedia provides a fundamental first step towards improving breastfeeding outcomes that are currently well below World Health Organisation recommendations globally. (Author)

Full URL: https://doi.org/10.1111/mcn.12969

2024-05306

Osteopontin Levels in Human Milk Are Related to Maternal Nutrition and Infant Health and Growth. Aksan A, Erdal I, Yalcin SS, et al (2021), Nutrients vol 13, no 8, July 2021, 2670

Background: Osteopontin (OPN) is a glycosylated phosphoprotein found in human tissues and body fluids. OPN in breast milk is thought to play a major role in growth and immune system development in early infancy. Here, we investigated maternal factors that may affect concentrations of OPN in breast milk, and the possible associated consequences for the health of neonates. Methods: General characteristics, health status, dietary patterns, and anthropometric measurements of 85 mothers and their babies were recorded antenatally and during postnatal follow-up. Results: The mean concentration of OPN in breast milk was 137.1 ± 56.8 mg/L. Maternal factors including smoking, BMI, birth route, pregnancy weight gain, and energy intake during lactation were associated with OPN levels ($p < 0.05$). Significant correlations were determined between body weight, length, and head circumference, respectively, and OPN levels after one ($r = 0.442$, $p = < 0.001$; $r = −0.284$, $p = < 0.001$; $r = −0.392$, $p = < 0.001$) and three months ($r = 0.501$, $p = < 0.001$; $r = −0.450$, $p = < 0.001$; $r = −0.498$, $p = < 0.001$) of lactation. A negative relation between fever-related infant hospitalizations from 0–3 months and breast milk OPN levels ($r = −0.599$, $p < 0.001$) was identified. Conclusions: OPN concentrations in breast milk differ depending on maternal factors, and these differences can affect the growth and immune system functions of infants. OPN supplementation in infant formula feed may have benefits and should be further investigated. (Author)

Full URL: https://doi.org/10.3390/nu13082670

2024-05299

The Association between Breastfeeding Duration and Lipid Profile among Children and Adolescents. Li Y, Gao D, Chen L, et al (2021), Nutrients vol 13, no 8, August 2021, 2728

To investigate the relationship between breastfeeding duration and lipid profile among children and adolescents, a cross-sectional survey using random cluster sampling was performed, and a national sample of 12,110 Chinese children and adolescents aged 5–19 years were collected. Breastfeeding duration and sociodemographic factors were collected by questionnaires. Fasting blood samples were obtained to test the lipid profile. Linear regression and logistic regression models were employed to evaluate the association between breastfeeding duration and lipid profile. We found that prolonged breastfeeding was related with a low level of total cholesterol (TC), LDL-C, HDL-C, and TC/HDL-C in children and adolescents. With an increased duration of breastfeeding, the magnitude of the association between breastfeeding and lipid profile enlarged. The levels of TC, LDL-C, HDL-C, and TC/HDL-C in participants who were breastfed for more than 12 months decreased by 6.225 (95% CI: −8.390, −4.059), 1.956 (95% CI: −3.709, −0.204), 1.273 (95% CI: −2.106, −0.440) mg/dL, and 0.072 (95%CI: −0.129, −0.015), respectively, compared with those who were not breastfed. The corresponding risk of high TC declined by 43% (aOR: 0.570, 95% CI: 0.403, 0.808). The association was similar in both boys and girls, but only statistically significant in children and young adolescents aged 5–14 years. This suggested that prolonged breastfeeding duration was related with low lipid levels and decreased abnormal lipid risk, especially in children and young adolescents. These findings support the intervention of prompting a prolonged duration of breastfeeding to improve the childhood lipid profile. (Author)

Full URL: https://doi.org/10.3390/nu13082728

2024-05296

Do Breastfeeding History and Diet Quality Predict Inhibitory Control at Preschool Age?. Willemsen Y, Beijers R, Vasquez AA, et al (2021), Nutrients vol 13, no 8, August 2021, 2752

Inhibitory control is the ability to control impulsive behavior. It is associated with a range of mental and physical health outcomes, including attention deficit hyperactivity disorder and substance dependence. Breastfeeding and healthy dietary patterns have been associated with better executive functions, of which inhibitory control is part. Additionally, breastfeeding has been associated with healthy dietary patterns. Following our preregistration in the Open Science Framework, we investigated the associations between breastfeeding history and inhibitory control at preschool age, with habitual diet quality as a potential mediating factor. A total of 72 families from a longitudinal study participated at child age 3. Breastfeeding questionnaires were administered at 2, 6, and 12 weeks, and at 12 and 36 months. Six inhibitory control tasks were performed during a home visit, and questionnaires were filled in by both parents. Diet quality at age 3 was assessed via three unannounced 24-h recalls. Structural equation modelling was performed in R. This study did not provide evidence that breastfeeding history is associated with inhibitory control in

3-year-old children. Furthermore, diet quality at age 3 did not mediate the link between breastfeeding history and inhibitory control. Previous studies have investigated broader aspects of inhibitory control, such as executive functions, and used different methods to assess nutritional intake, which might explain our differential findings. Our findings contribute to the growing literature on associations between nutrition and behavior. Future replications with larger and more diverse preschool samples are recommended. (Author)

Full URL: https://doi.org/10.3390/nu13082752

2024-05267

Breastmilk Feeding during the First 4 to 6 Months of Age and Childhood Disease Burden until 10 Years of Age. Kim JH, Lee SW, Lee JE, et al (2021), Nutrients vol 13, no 8, August 2021, p 2825

Background: Breastfeeding is recommended due to its beneficial effects on human health. However, the effect of breastfeeding on health differs, resulting in various childhood diseases. Objective: Our purpose was to investigate the association between breastfeeding at least in the first 4 months and the subsequent development of 15 certainly defined childhood diseases until 10 years of age, the all-cause hospitalization rate and growth at 6–7 years of age. Methods: Participants included propensity-score matched 188,052 children born between January 2008 and December 2009, who were followed up till 10 years of age. Data were taken from the National Investigation of birth Cohort in Korea study 2008 database. Risk ratios were obtained using a modified Poisson regression and weighted risk differences using binomial regression. Results: Compared to formula feeding, breastfeeding was associated with decreased risks of febrile convulsion, attention deficit hyperactivity disorder and autism spectrum disorder, pneumonia, acute bronchiolitis, hypertrophic pyloric stenosis, asthma, all-cause hospitalization, overweight/obesity and short stature. Exclusive breastfeeding at 4 to 6 months of age had similar results to exclusive breastfeeding over 6 months of age. Conclusions: Breastfeeding in early infancy reduces the risk for various childhood diseases, all-cause hospitalization rate, obesity, and short stature during childhood. (Author)

Full URL: https://doi.org/10.3390/nu13082825

2024-05257

Extensive Study of Breast Milk and Infant Growth: Protocol of the Cambridge Baby Growth and Breastfeeding Study (CBGS-BF). Olga L, Petry CJ, van Diepen JA, et al (2021), Nutrients vol 13, no 8, August 2021, p 2879

Growth and nutrition during early life have been strongly linked to future health and metabolic risks. The Cambridge Baby Growth Study (CBGS), a longitudinal birth cohort of 2229 mother–infant pairs, was set up in 2001 to investigate early life determinant factors of infant growth and body composition in the UK setting. To carry out extensive profiling of breastmilk intakes and composition in relation to infancy growth, the Cambridge Baby Growth and Breastfeeding Study (CBGS-BF) was established upon the original CBGS. The strict inclusion criteria were applied, focusing on a normal birth weight vaginally delivered infant cohort born of healthy and non-obese mothers. Crucially, only infants who were exclusively breastfed for the first 6 weeks of life were retained in the analysed study sample. At each visit from birth, 2 weeks, 6 weeks, and then at 3, 6, 12, 24, and 36 months, longitudinal anthropometric measurements and blood spot collections were conducted. Infant body composition was assessed using air displacement plethysmography (ADP) at 6 weeks and 3 months of age. Breast milk was collected for macronutrients and human milk oligosaccharides (HMO) measurements. Breast milk intake volume was also estimated, as well as sterile breastmilk and infant stool collection for microbiome study. (Author)

Full URL: https://doi.org/10.3390/nu13082879

2024-05256

Breastfeeding and Overweight in European Preschoolers: The ToyBox Study. Usheva N, Lateva M, Galcheva S, et al (2021), Nutrients vol 13, no 8, August 2021, p 2880

The benefits of breastfeeding (BF) include risk reduction of later overweight and obesity. We aimed to analyse the association between breastfeeding practices and overweight/obesity among preschool children participating in the ToyBox study. Data from children in the six countries, participating in the ToyBox-study (Belgium, Bulgaria, Germany, Greece, Poland, and Spain) 7554 children/families and their age is 3.5–5.5 years, 51.9% were boys collected cross-sectionally in 2012. The questionnaires included parents' self-reported data on their weight, height, socio-demographic status, and infant feeding practices. Measurements of preschool children's weight and height were done by trained researchers using standard protocols and equipment. The ever breastfeeding rate in the total sample was 85.0% (n = 5777). Only 6.3% (n = 428) of the children from the general sample were exclusively breastfed (EBF) for the duration of the first six months. EBF for four to six months was significantly ($p < 0.001$) less likely among mothers with formal education < 12 years (adjusted Odds Ratio (OR) = 0.61; 95% Confidence interval (CI) 0.44–0.85),

smoking throughout pregnancy (adjusted OR = 0.39; 95% CI 0.24–0.62), overweight before pregnancy (adjusted OR = 0.67; 95%CI 0.47–0.95) and ≤25 years old. The median duration of any breastfeeding was five months. The prevalence of exclusive formula feeding during the first five months in the general sample was about 12% (n = 830). The prevalence of overweight and obesity at preschool age was 8.0% (n = 542) and 2.8% (n = 190), respectively. The study did not identify any significant association between breastfeeding practices and obesity in childhood when adjusted for relevant confounding factors (p > 0.05). It is likely that sociodemographic and lifestyle factors associated with breastfeeding practices may have an impact on childhood obesity. The identified lower than desirable rates and duration of breastfeeding practices should prompt enhanced efforts for effective promotion, protection, and support of breastfeeding across Europe, and in particular in regions with low BF rates. (Author)

Full URL: https://doi.org/10.3390/nu13082880

2024-05193

The Gestational Pathologies Effect on the Human Milk Redox Homeostasis: A First Step towards Its Definition. Peila C, Riboldi L, Spada E, et al (2023), Nutrients vol 15, no 21, November 2023, 4551

Background. Human Milk (HM) is a dynamic nourishment; its composition is influenced by several conditions such as gestational age, maternal diet and ethnicity. It appears important to evaluate the impact that gestational pathologies have on HM components and if their presence, as a source of oxidative stress in the mother, influence milk's redox homeostasis. To assess the effect of Preeclampsia (PE) and Gestational Diabetes Mellitus (GDM) on some aspects of human milk redox homeostasis, we chose to investigate both oxidative and antioxidant aspects, with, respectively, Lipid hydroperoxides (LOOHs) and Glutathione (GSH). Methods. Women with PE, GDM and who were healthy were recruited for this study. Colostrum, transitional and mature milk samples were collected. GSH and LOOHs levels were measured using a spectrophotometric test. To investigate the effect of pathology on redox homeostasis, a mixed linear model with unistructural covariance structure was performed. Results. A total of 120 mothers were recruited. The GSH concentration results were significantly lower in GDM women than in healthy women only in colostrum ($p < 0.01$). No other differences emerged. LOOHs was not detectable in almost all the samples. Discussion. Our study is the first to extensively evaluate these components in the HM of women with these gestational pathologies. The main observation is that GDM can alter the GSH level of HM, mainly in colostrum. (Author)

Full URL: https://doi.org/10.3390/nu15214551

2024-05188

The Associations of Breastfeeding Status at 6 Months with Anthropometry, Body Composition, and Cardiometabolic Markers at 5 Years in the Ethiopian Infant Anthropometry and Body Composition Birth Cohort. Heltbech MS, Jensen CL, Girma T, et al (2023), Nutrients vol 15, no 21, November 2023, 4595

(1) Background: Breastfeeding (BF) has been shown to lower the risk of overweight and cardiometabolic disease later in life. However, evidence from low-income settings remains sparse. We examined the associations of BF status at 6 months with anthropometry, body composition (BC), and cardiometabolic markers at 5 years in Ethiopian children. (2) Methods: Mother–child pairs from the iABC birth cohort were categorised into four BF groups at 6 months: 1. "Exclusive", 2. "Almost exclusive", 3. "Predominantly" and 4. "Partial or none". The associations of BF status with anthropometry, BC, and cardiometabolic markers at 5 years were examined using multiple linear regression analyses in three adjustment models. (3) Results: A total of 306 mother–child pairs were included. Compared with "Exclusive", the nonexclusive BF practices were associated with a lower BMI, blood pressure, and HDL-cholesterol at 5 years. Compared with "Exclusive", "Predominantly" and "Almost exclusive" had shorter stature of −1.7 cm (−3.3, −0.2) and −1.2 cm (−2.9, 0.5) and a lower fat-free mass index of −0.36 kg/m2 (−0.71, −0.005) and −0.38 kg/m2 (−0.76, 0.007), respectively, but a similar fat mass index. Compared with "Exclusive", "Predominantly" had higher insulin of 53% (2.01, 130.49), "Almost exclusive" had lower total and LDL-cholesterol, and "Partial or none" had a lower fat mass index. (5) Conclusions: Our data suggest that children exclusively breastfed at 6 months of age are overall larger at 5 years, with greater stature, higher fat-free mass but similar fat mass, higher HDL-cholesterol and blood pressure, and lower insulin concentrations compared with predominantly breastfed children. Long-term studies of the associations between BF and metabolic health are needed to inform policies. (Author)

Full URL: https://doi.org/10.3390/nu15214595

2024-05182

The Influence of Early Nutrition on Neurodevelopmental Outcomes in Preterm Infants. Silveira RC, Corso AL, Procianoy RS (2023), Nutrients vol 15, no 21, November 2023, 4644

Premature infants, given their limited reserves, heightened energy requirements, and susceptibility to nutritional deficits, require specialized care. Aim: To examine the complex interplay between nutrition and neurodevelopment

in premature infants, underscoring the critical need for tailored nutritional approaches to support optimal brain growth and function. Data sources: PubMed and MeSH and keywords: preterm, early nutrition, macronutrients, micronutrients, human milk, human milk oligosaccharides, probiotics AND neurodevelopment or neurodevelopment outcomes. Recent articles were selected according to the authors' judgment of their relevance. Specific nutrients, including macro (amino acids, glucose, and lipids) and micronutrients, play an important role in promoting neurodevelopment. Early and aggressive nutrition has shown promise, as has recognizing glucose as the primary energy source for the developing brain. Long-chain polyunsaturated fatty acids, such as DHA, contribute to brain maturation, while the benefits of human milk, human milk oligosaccharides, and probiotics on neurodevelopment via the gut-brain axis are explored. This intricate interplay between the gut microbiota and the central nervous system highlights human milk oligosaccharides' role in early brain maturation. Conclusions: Individualized nutritional approaches and comprehensive nutrient strategies are paramount to enhancing neurodevelopment in premature infants, underscoring human milk's potential as the gold standard of nutrition for preterm infants. (Author)

Full URL: https://doi.org/10.3390/nu15214644

2024-04743

Iodine Concentration in the Breast Milk and Urine as Biomarkers of Iodine Nutritional Status of Lactating Women and Breastfed Infants in Taiwan. Huang C-J, Li J-Z, Hwu C-M, et al (2023), Nutrients vol 15, no 19, October 2023, 4125

Breast milk iodine concentration (BMIC) can be different when median urinary iodine concentration (UIC) is similar. The BMIC, UIC/creatinine (Cr), estimated 24-h urinary iodine excretion (24-h UIE) of lactating women in Taiwan is unknown. This study enrolled lactating women from Taipei Veterans General Hospital (August 2021–February 2023). Each participant provided a random spot urine sample, two breast milk samples, a blood sample, and completed a food frequency questionnaire on the same day. Iodine measurement was performed by inductively coupled plasma mass spectrometry. The median UIC of the enrolled 71 women was 91.1 μg/L, indicating insufficient iodine status; however, the median BMIC was 166.6 μg/L and this suggested that the amount of iodine delivered through breast milk was adequate for the breastfed infants. BMIC was correlated with UIC/Cr and 24-h UIE (both rs = 0.49) but not with UIC (rs = 0.18) or thyroid stimulating hormone (rs = 0.07). Women who did not consume dairy products (adjusted odds ratio: 24.41, 95% confidence interval: 1.26–471.2) and multivitamins (adjusted odds ratio: 8.26, 95% confidence interval: 1.76–38.79) were at increased odds for having lower BMIC. The results suggest that measuring maternal UIC alone may not be sufficient, as BMIC, UIC/Cr, and 24-h UIE are all important biomarkers. Ingestion of dairy products and multivitamins were independently associated with BMIC. (Author)

Full URL: https://doi.org/10.3390/nu15194125

2024-04720

Fingerprinting of Proteases, Protease Inhibitors and Indigenous Peptides in Human Milk. Thesbjerg MN, Nielsen SD-H, Sundekilde UK, et al (2023), Nutrients vol 15, no 19, October 2023, 4169

The presence of proteases and their resulting level of activity on human milk (HM) proteins may aid in the generation of indigenous peptides as part of a pre-digestion process, of which some have potential bioactivity for the infant. The present study investigated the relative abundance of indigenous peptides and their cleavage products in relation to the abundance of observed proteases and protease inhibitors. The proteomes and peptidomes in twelve HM samples, representing six donors at lactation months 1 and 3, were profiled. In the proteome, 39 proteases and 29 protease inhibitors were identified in 2/3 of the samples. Cathepsin D was found to be present in higher abundance in the proteome compared with plasmin, while peptides originating from plasmin cleavage were more abundant than peptides from cathepsin D cleavage. As both proteases are present as a system of pro- and active- forms, their activation indexes were calculated. Plasmin was more active in lactation month 3 than month 1, which correlated with the total relative abundance of the cleavage product ascribed to plasmin. By searching the identified indigenous peptides in the milk bioactive peptide database, 283 peptides were ascribed to 10 groups of bioactivities. Antimicrobial peptides were significantly more abundant in month 1 than month 3; this group comprised 103 peptides, originating from the β-CN C-terminal region. (Author)

Full URL: https://doi.org/10.3390/nu15194169

2024-04712

Preeclampsia and Its Impact on Human Milk Activin A Concentration. Coscia A, Riboldi L, Spada E, et al (2023), Nutrients vol 15, no 19, October 2023, 4296

Background: It is known that preeclampsia affects lactogenesis. However, data on the effects of this pathology on human milk neurobiomarker composition are not available. The aim of this study is to investigate the effects of this

gestational pathology on activin A levels, a neurobiomarker known to play an important role in the development and protection of the central nervous system. Methods: The women recruited were divided in two different study groups: preeclamptic or normotensive women. All the human milk samples were collected using the same procedure. Activin A was quantified using an Enzyme-linked immunosorbent assay (ELISA) test. To investigate the effect of preeclampsia on the activin A concentration in the three lactation phases, a mixed linear model with a unistructural covariance structure, with the mother as the random effect, and fixed effects were performed. Results: Activin A was detected in all samples. There were no significant differences between preeclamptic and normotensive women. The only significant effect is related to the lactation phase: the difference between colostrum and mature milk ($p < 0.01$) was significant. In conclusion, these results allow us to affirm that breast milk's beneficial properties are maintained even if preeclampsia occurs. (Author)

Full URL: https://doi.org/10.3390/nu15194296

2024-04440

Circadian Variation in Human Milk Hormones and Macronutrients. Suwaydi MA, Lai CT, Rea A, et al (2023), Nutrients vol 15, no 17, September 2023, 3729

There is an inadequate understanding of the daily variations in hormones and macronutrients in human milk (HM), and sample collection protocols vary considerably from study to study. To investigate changes in these milk components across 24 h, 22 lactating women collected small milk samples before and after each breastfeed or expression from each breast. Test weighing was used to determine the volume of HM consumed in each feed. The concentrations of leptin, adiponectin, insulin, fat, and glucose were measured, and the intakes were calculated. A linear mixed model was fitted to assess within-feed and circadian variation in HM feed volume and concentration, and intakes of several components. The average infant intake of HM was 879 g/24 h. Significantly higher pre-feed concentrations were found for adiponectin and glucose and lower post-feed concentrations were found for insulin and fat. Significant circadian rhythms were displayed for leptin, adiponectin, insulin, glucose (both concentration and intake), fat concentration, and milk volume. These findings demonstrate the necessity for setting up standardised and rigorous sampling procedures that consider both within-feed and circadian variations in HM components to gain a more precise understanding of the impacts of these components on infant health, growth and development. (Author)

Full URL: https://doi.org/10.3390/nu15173729

2024-04152

Influence of Human Milk on Very Preterms' Gut Microbiota and Alkaline Phosphatase Activity. Morais J, Marques C, Faria A, et al (2021), Nutrients vol 13, no 5, May 2021, 1564

The FEEDMI Study (NCT03663556) evaluated the influence of infant feeding (mother's own milk (MOM), donor human milk (DHM) and formula) on the fecal microbiota composition and alkaline phosphatase (ALP) activity in extremely and very preterm infants (≤32 gestational weeks). In this observational study, preterm infants were recruited within the first 24 h after birth. Meconium and fecal samples were collected at four time points (between the 2nd and the 26th postnatal days. Fecal microbiota was analyzed by RT-PCR and by 16S rRNA sequencing. Fecal ALP activity, a proposed specific biomarker of necrotizing enterocolitis (NEC), was evaluated by spectrophotometry at the 26th postnatal day. A total of 389 fecal samples were analyzed from 117 very preterm neonates. Human milk was positively associated with beneficial bacteria, such as Bifidobacterium, Bacteroides ovatus, and Akkermancia muciniphila, as well as bacterial richness. Neonates fed with human milk during the first week of life had increased Bifidobacterium content and fecal ALP activity on the 26th postnatal day. These findings point out the importance of MOM and DHM in the establishment of fecal microbiota on neonates prematurely delivered. Moreover, these results suggest an ALP pathway by which human milk may protect against NEC. (Author)

Full URL: https://doi.org/10.3390/nu13051564

2024-04037

Breastfeeding and Inborn Errors of Amino Acid and Protein Metabolism: A Spreadsheet to Calculate Optimal Intake of Human Milk and Disease-Specific Formulas. Vitoria-Miñana I, Couce M-L, González-Lamuño D, et al (2023), Nutrients vol 15, no 16, August 2023, 3566

Human milk (HM) offers important nutritional benefits. However, except for phenylketonuria (PKU), there are little data on optimal levels of consumption of HM and a special formula free of disease-related amino acids (SF-AA) in infants with inborn errors of metabolism of amino acids and proteins (IEM-AA-P). We designed a spreadsheet to calculate the amounts of SF-AA and HM required to cover amino acid, protein, and energy needs in patients with the nine main IEM-AA-P in infants aged under 6 months. Upon entering the infant's weight and the essential amino acid or intact protein requirements for the specific IEM, the spreadsheet calculates the corresponding required volume of HM

based on the amino acid concentration in HM. Next, the theoretical daily fluid intake (typical range, 120–200 mL/kg/day) is entered, and the estimated daily fluid intake is calculated. The required daily volume of SF-AA is calculated as the difference between the total fluid intake value and the calculated volume of HM. The spreadsheet allows for the introduction of a range of requirements based on the patient's metabolic status, and includes the option to calculate the required volume of expressed HM, which may be necessary in certain conditions such as MMA/PA and UCD. In cases in which breastfeeding on demand is feasible, the spreadsheet determines the daily amount of SF-AA divided over 6–8 feeds, assuming that SF-AA is administered first, followed by HM as needed. Intake data calculated by the spreadsheet should be evaluated in conjunction with data from clinical and nutritional analyses, which provide a comprehensive understanding of the patient's nutritional status and help guide individualized dietary management for the specific IEM. (Author)

Full URL: https://doi.org/10.3390/nu15163566

2024-04035

Potential Epigenetic Effects of Human Milk on Infants' Neurodevelopment. Gialeli G, Panagopoulou O, Liosis G, et al (2023), Nutrients vol 15, no 16, August 2023, 3614

The advantages of human milk feeding, especially in preterm babies, are well recognized. Infants' feeding with breast milk lowers the likelihood of developing a diverse range of non-communicable diseases later in life and it is also associated with improved neurodevelopmental outcomes. Although the precise mechanisms through which human milk feeding is linked with infants' neurodevelopment are still unknown, potential epigenetic effects of breast milk through its bioactive components, including non-coding RNAs, stem cells and microbiome, could at least partly explain this association. Micro- and long-non-coding RNAs, enclosed in milk exosomes, as well as breast milk stem cells, survive digestion, reach the circulation and can cross the blood–brain barrier. Certain non-coding RNAs potentially regulate genes implicated in brain development and function, whereas nestin-positive stem cells can possibly differentiate into neural cells or/and act as epigenetic regulators in the brain. Furthermore, breast milk microbiota contributes to the establishment of infant's gut microbiome, which is implicated in brain development via epigenetic modifications and key molecules' regulation. This narrative review provides an updated analysis of the relationship between breast milk feeding and infants' neurodevelopment via epigenetics, pointing out how breast milk's bioactive components could have an impact on the neurodevelopment of both full-term and preterm babies. (Author)

Full URL: https://doi.org/10.3390/nu15163614

2024-03412

Infant Formula Supplemented with Five Human Milk Oligosaccharides Shifts the Fecal Microbiome of Formula-Fed Infants Closer to That of Breastfed Infants. Holst AQ, Myers P, Rodríguez-García P, et al (2023), Nutrients vol 15, no 14, July 2023, 3087

Breastmilk is the optimal source of infant nutrition, with short-term and long-term health benefits. Some of these benefits are mediated by human milk oligosaccharides (HMOs), a unique group of carbohydrates representing the third most abundant solid component of human milk. We performed the first clinical study on infant formula supplemented with five different HMOs (5HMO-mix), comprising 2'-fucosyllactose, 3-fucosyllactose, lacto-N-tetraose, 3'-sialyllactose and 6'-sialyllactose at a natural total concentration of 5.75 g/L, and here report the analysis of the infant fecal microbiome. We found an increase in the relative abundance of bifidobacteria in the 5HMO-mix cohort compared with the formula-fed control, specifically affecting bifidobacteria that can produce aromatic lactic acids. 5HMO-mix influenced the microbial composition as early as Week 1, and the observed changes persisted to at least Week 16, including a relative decrease in species with opportunistic pathogenic strains down to the level observed in breastfed infants during the first 4 weeks. We further analyzed the functional potential of the microbiome and observed features shared between 5HMO-mix-supplemented and breastfed infants, such as a relative enrichment in mucus and tyrosine degradation, with the latter possibly being linked to the aromatic lactic acids. The 5HMO-mix supplement, therefore, shifts the infant fecal microbiome closer to that of breastfed infants. (Author)

Full URL: https://doi.org/10.3390/nu15143087

2024-03201

Lactation induction in a transgender woman: case report and recommendations for clinical practice. van Amesfoort JE, van Mello NM, van Genugten R (2024), International Breastfeeding Journal vol 19, no 18, February 2024

Background

We present a case of non-puerperal induced lactation in transgender woman. Medical literature on lactation induction for transgender women is scarce, and the majority of literature and protocols on lactation induction is based on

research in cisgender women. Healthcare professionals may lack the precise knowledge about lactation induction and may therefore feel insecure when advice is requested. Subsequently, there is a rising demand for guidelines and support.

Methods
Patient medical record was consulted and a semi-structured interview was conducted to explore the motive for lactation induction, the experience of lactation induction, and to gather additional information about the timeline and course of events.

Case presentation
In this case a 37-year-old transgender woman, who was under the care of the centre of expertise on gender dysphoria in Amsterdam, and in 2020 started lactation induction because she had the wish to breastfeed her future infant. She was in a relationship with a cisgender woman and had been using gender affirming hormone therapy for 13 years. Prior to initiating gender affirming hormone therapy she had cryopreserved her semen. Her partner conceived through Intracytoplasmic Sperm Injection, using our patient's cryopreserved sperm.

To induce lactation, we implemented a hormone-regimen to mimic pregnancy, using estradiol and progesterone, and a galactogogue; domperidone. Our patient started pumping during treatment. Dosage of progesterone and estradiol were significantly decreased approximately one month before childbirth to mimic delivery and pumping was increased. Our patient started lactating and although the production of milk was low, it was sufficient for supplementary feeding and a positive experience for our patient.

Two weeks after birth, lactation induction was discontinued due to suckling problems of the infant and low milk production.

Conclusions
This case report underlined that lactation induction protocols commonly used for cisgender women are also effective in transgender women. However, the amount of milk produced may not be sufficient for exclusive nursing. Nevertheless, success of induced lactation may be attributed to its importance for parent-infant bonding, rather than the possibility of exclusive chestfeeding. (Author)

Full URL: https://doi.org/10.1186/s13006-024-00624-1

2024-03197

Associated Factors of Exclusive Breastfeeding Intention among Pregnant Women in Najran, Saudi Arabia. Ibrahim HA, Alshahrani MA, Al-Thubaity DD, et al (2023), Nutrients vol 15, no 13, July 2023, 3051

The exclusive breastfeeding (EBF) intention conceived by pregnant women is the most important predictor of breastfeeding (BF) initiation, duration, and continuation. This study explores the associated factors of EBF intention among pregnant women. This was a descriptive cross-sectional study conducted from November 2022 to January 2023 with 382 pregnant women who came to the outpatient clinic in the Maternal and Children Hospital (MCH). Four instruments were used for data collection: the Infant Feeding Intention scale, the Gender-Friendly BF Knowledge scale (GFBKS), the Iowa Infant Feeding Attitude scale (IIFAS), and the basic data questionnaire. The study findings indicated that 51.8% and 75.9% of gravida women had adequate knowledge and a positive attitude regarding BF. Furthermore, 56.3% of the participants had a high intention for EBF. Binary logistic regression illustrated that occupational status, antenatal care, plan for the current pregnancy, BF practice, last child delivery mode, medical disorder during the current pregnancy, age, BF knowledge, and attitude are potential predictors. The goodness of fit test revealed that 46.8% of the EBF intention could be anticipated through the positive pre-mentioned factors. The low EBF intention is modifiable by addressing the previously positive predictors. BF educational interventions should be tailored based on EBF intention predictors in order to be effective and lead to behavior change. (Author)

Full URL: https://doi.org/10.3390/nu15133051

2024-03159

Human Milk Oligosaccharide Profile across Lactation Stages in Israeli Women—A Prospective Observational Study. Asher AT, Mangel L, Ari JB, et al (2023), Nutrients vol 15, no 11, June 2023, 2548

Human milk oligosaccharides (HMOs) stimulate the growth of gut commensals, prevent the adhesion of enteropathogens and modulate host immunity. The major factors influencing variations in the HMO profile are polymorphisms in the secretor (Se) or Lewis (Le) gene, which affect the activity of the enzymes fucoslytransferase 2

and 3 (FUT2 and FUT3) that lead to the formation of four major fucosylated and non-fucosylated oligosaccharides (OS). This pilot study aimed to determine the HMO profile of Israeli breastfeeding mothers of 16 term and 4 preterm infants, from a single tertiary center in the Tel Aviv area. Fifty-two human milk samples were collected from 20 mothers at three-time points: colostrum, transitional milk and mature milk. The concentrations of nine HMOs were assessed using liquid chromatography coupled with mass spectra chromatograms. Fifty-five percent of the mothers were secretors and 45% were non-secretors. Infant sex affected HMO levels depending on the maternal secretor status. Secretor mothers to boys had higher levels of FUT2-dependent OS and higher levels of disialyllacto-N-tetraose in the milk of mothers to girls, whereas non-secretor mothers to girls had higher levels of 3′-sialyllactose. In addition, the season at which the human milk samples were obtained affected the levels of some HMOs, resulting in significantly lower levels in the summer. Our findings provide novel information on the irregularity in the HMO profile among Israeli lactating women and identify several factors contributing to this variability. (Author)

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2024-03049

Breast Milk Constituents and the Development of Breast Milk Jaundice in Neonates: A Systematic Review. Gao C, Guo Y, Huang M, et al (2023), Nutrients vol 15, no 10, May 2023, 2261

Breast milk is tailored for optimal growth in all infants; however, in some infants, it is related to a unique phenomenon referred to as breast milk jaundice (BMJ). BMJ is a type of prolonged unconjugated hyperbilirubinemia that is often late onset in otherwise healthy-appearing newborns, and its occurrence might be related to breast milk itself. This review aims to systematically evaluate evidence regarding breast milk composition and the development of BMJ in healthy neonates. PubMed, Scopus and Embase were searched up to 13 February 2023 with key search terms, including neonates, hyperbilirubinemia, and breastfeeding. A total of 678 unique studies were identified and 12 were ultimately included in the systematic review with narrative synthesis. These included studies covered both nutritional compositions (e.g., fats and proteins) and bioactive factors (e.g., enzymes and growth factors) of breast milk and formally assessed the difference in the concentration (or presence) of various endogenous components of breast milk collected from mothers of BMJ infants and healthy infants. The results were inconsistent and inconclusive for most of the substances of interest, and there was only a single study available (e.g., total energy and mineral content, bile salts and cytokines); conflicting or even contradictory results arose when there were two or more studies on the subject matter (e.g., fats and free fatty acids contents and epidermal growth factor). The etiology of BMJ is likely multifactorial, and no single constituent of breast milk could explain all the BMJ cases observed. Further well-designed studies are warranted to investigate the complex interaction between maternal physiology, the breast milk system and infant physiology before this field could be progressed to uncover the etiology of BMJ. (Author)

Full URL: https://doi.org/10.3390/nu15102261

2024-03035

Infants Fed Breastmilk or 2′-FL Supplemented Formula Have Similar Systemic Levels of Microbiota-Derived Secondary Bile Acids. Hill DR, Buck RH (2023), Nutrients vol 15, no 10, May 2023, 2339

Human milk represents an optimal source of nutrition during infancy. Milk also serves as a vehicle for the transfer of growth factors, commensal microbes, and prebiotic compounds to the immature gastrointestinal tract. These immunomodulatory and prebiotic functions of milk are increasingly appreciated as critical factors in the development of the infant gut and its associated microbial community. Advances in infant formula composition have sought to recapitulate some of the prebiotic and immunomodulatory functions of milk through human milk oligosaccharide (HMO) fortification, with the aim of promoting healthy development both within the gastrointestinal tract and systemically. Our objective was to investigate the effects of feeding formulas supplemented with the HMO 2′-fucosyllactose (2′-FL) on serum metabolite levels relative to breastfed infants. A prospective, randomized, double-blinded, controlled study of infant formulas (64.3 kcal/dL) fortified with varying levels of 2′-FL and galactooligosaccharides (GOS) was conducted [0.2 g/L 2′-FL + 2.2 g/L GOS; 1.0 g/L 2′-FL + 1.4 g/L GOS]. Healthy singleton infants age 0–5 days and with birth weight > 2490 g were enrolled (n = 201). Mothers chose to either exclusively formula-feed or breastfeed their infant from birth to 4 months of age. Blood samples were drawn from a subset of infants at 6 weeks of age (n = 35–40 per group). Plasma was evaluated by global metabolic profiling and compared to a breastfed reference group (HM) and a control formula (2.4 g/L GOS). Fortification of control infant formula with the HMO 2′-FL resulted in significant increases in serum metabolites derived from microbial activity in the gastrointestinal tract. Most notably, secondary bile acid production was broadly increased in a dose-dependent manner among infants receiving 2′-FL supplemented formula relative to the control formula. 2′-FL supplementation increased secondary bile acid production to levels associated with breastfeeding. Our data indicate that supplementation of infant formula with 2′-FL supports the production of secondary microbial metabolites at levels comparable to breastfed infants. Thus,

dietary supplementation of HMO may have broad implications for the function of the gut microbiome in systemic metabolism. (Author)

Full URL: https://doi.org/10.3390/nu15102339

2024-03009

Breastfeeding-Related Practices in Rural Ethiopia: Colostrum Avoidance. Olcina Simón MA, Rotella R, Soriano JM, et al (2023), Nutrients vol 15, no 9, April 2023, 2177

The practices of colostrum avoidance and prelacteal feeding, which are common in many developing countries, including Ethiopia, are firmly rooted in ancient traditions. The main objective of this work is to identify the prevalence of colostrum avoidance and study its associated factors among mothers of children aged less than 2 years old in the Oromia region of Ethiopia. A cross-sectional study on the practice of colostrum avoidance/prelacteal feeding was conducted in a rural community with 114 mothers of children under 2 years old. Our results reflected that colostrum avoidance and prelacteal feeding were practiced by 56.1% of mothers. The percentage of women who started breastfeeding in the first hour after birth, as recommended by the WHO, was 2.6%. Of the women who practiced colostrum avoidance, 67.2% gave birth at home, and 65.6% were attended by relatives. The likelihood of avoiding colostrum increases in mothers who have a lower educational level, who did not receive health care at the time of delivery, who think that colostrum is dirty and dangerous and who did not receive information about breastfeeding from healthcare professionals. The knowledge emanating from this work may be useful in designing new breastfeeding education programs and/or interventions in Ethiopia and other developing countries. (Author)

Full URL: https://doi.org/10.3390/nu15092177

2024-02999

The Impact of Linoleic Acid on Infant Health in the Absence or Presence of DHA in Infant Formulas. Einerhand AWC, Mi W, Haandrikman A, et al (2023), Nutrients vol 15, no 9, April 2023, 2187

Both linoleic acid (LA) and α-linolenic acid (ALA) are essential dietary fatty acids, and a balanced dietary supply of these is of the utmost importance for health. In many countries across the globe, the LA level and LA/ALA ratio in breast milk (BM) are high. For infant formula (IF), the maximum LA level set by authorities (e.g., Codex or China) is 1400 mg LA/100 kcal ≈ 28% of total fatty acid (FA) ≈ 12.6% of energy. The aims of this study are: (1) to provide an overview of polyunsaturated fatty acid (PUFA) levels in BM across the world, and (2) to determine the health impact of different LA levels and LA/ALA ratios in IF by reviewing the published literature in the context of the current regulatory framework. The lipid composition of BM from mothers living in 31 different countries was determined based on a literature review. This review also includes data from infant studies (intervention/cohort) on nutritional needs regarding LA and ALA, safety, and biological effects. The impact of various LA/ALA ratios in IF on DHA status was assessed within the context of the current worldwide regulatory framework including China and the EU. Country averages of LA and ALA in BM range from 8.5–26.9% FA and 0.3–2.65% FA, respectively. The average BM LA level across the world, including mainland China, is below the maximum 28% FA, and no toxicological or long-term safety data are available on LA levels > 28% FA. Although recommended IF LA/ALA ratios range from 5:1 to 15:1, ratios closer to 5:1 seem to promote a higher endogenous synthesis of DHA. However, even those infants fed IF with more optimal LA/ALA ratios do not reach the DHA levels observed in breastfed infants, and the levels of DHA present are not sufficient to have positive effects on vision. Current evidence suggests that there is no benefit to going beyond the maximum LA level of 28% FA in IF. To achieve the DHA levels found in BM, the addition of DHA to IF is necessary, which is in line with regulations in China and the EU. Virtually all intervention studies investigating LA levels and safety were conducted in Western countries in the absence of added DHA. Therefore, well-designed intervention trials in infants across the globe are required to obtain clarity about optimal and safe levels of LA and LA/ALA ratios in IF. (Author)

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2024-02974

Human Milk Calorie Guide: A Novel Color-Based Tool to Estimate the Calorie Content of Human Milk for Preterm Infants. Pillai A, Albersheim S, Niknafs N, et al (2023), Nutrients vol 15, no 8, April 2023, 1866

Fixed-dose fortification of human milk (HM) is insufficient to meet the nutrient requirements of preterm infants. Commercial human milk analyzers (HMA) to individually fortify HM are unavailable in most centers. We describe the development and validation of a bedside color-based tool called the 'human milk calorie guide'(HMCG) for differentiating low-calorie HM using commercial HMA as the gold standard. Mothers of preterm babies (birth weight ≤ 1500 g or gestation ≤ 34 weeks) were enrolled. The final color tool had nine color shades arranged as three rows of three shades each (rows A, B, and C). We hypothesized that calorie values for HM samples would increase with

increasing ‘yellowness’ predictably from row A to C. One hundred thirty-one mother’s own milk (MOM) and 136 donor human milk (DHM) samples (total n = 267) were color matched and analyzed for macronutrients. The HMCG tool performed best in DHM samples for predicting lower calories (<55 kcal/dL) (AUC 0.87 for category A DHM) with modest accuracy for >70 kcal/dL (AUC 0.77 for category C DHM). For MOM, its diagnostic performance was poor. The tool showed good inter-rater reliability (Krippendorff’s alpha = 0.80). The HMCG was reliable in predicting lower calorie ranges for DHM and has the potential for improving donor HM fortification practices. (Author)

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2024-02964

Anti-SARS-CoV-2 Immunoglobulins in Human Milk after Coronavirus Disease or Vaccination—Time Frame and Duration of Detection in Human Milk and Factors That Affect Their Titers: A Systematic Review. Dimitroglou M, Sokou R, Iacovidou N, et al (2023), Nutrients vol 15, no 8, April 2023, 1905

Human milk (HM) of mothers infected with or vaccinated against SARS-CoV-2 contains specific immunoglobulins, which may protect their offspring against infection or severe disease. The time frame and duration after infection or vaccination, during which these immunoglobulins are detected in HM, as well as the major factors that influence their levels, have not been fully elucidated. This systematic review aimed to collect the existing literature and describe the immune response, specifically regarding the immunoglobulins in HM after COVID-19 disease or vaccination in non-immune women. We conducted a systematic search of PubMed and Scopus databases to identify studies published up until 19 March 2023. In total, 975 articles were screened, and out of which 75 were identified as being relevant and were finally included in this review. Infection by SARS-CoV-2 virus primarily induces an IgA immune response in HM, while vaccination predominantly elevates IgG levels. These immunoglobulins give HM a neutralizing capacity against SARS-CoV-2, highlighting the importance of breastfeeding during the pandemic. The mode of immune acquisition (infection or vaccination) and immunoglobulin levels in maternal serum are factors that seem to influence immunoglobulin levels in HM. Further studies are required to determine the impact of other factors, such as infection severity, lactation period, parity, maternal age and BMI on immunoglobulin level in HM. (Author)

Full URL: https://doi.org/10.3390/nu15081905

2024-02963

LLL around the world: LLL Canada. Heslett C (2024), Breastfeeding Matters no 260, March-April 2024, pp 14-17

Canadian La Leche League leader, Cecily Heslett, provides some background and history of LLL Canada, which produced the first groups outside the USA, in 1961. Today, La Leche League Canada provides support and information in English and other languages, with Ligue La Leche offering French language support. There are 260 leaders working in 100 groups across the country. Explains how difficult it is for leaders to meet up in one place, and virtual meetings are also problematic because of the six different time zones, but during the pandemic local groups were able to move their meetings online, a move which has continued and proved advantageous, especially during severe weather conditions which can lead to road closures and the cancellation of in-person meetings. Considers how knowledge about breastfeeding has changed over the years, and how at one time in the UK it was believed that breast milk was only beneficial for the first three months, a belief probably linked to the fact that many mothers returned to work when their maternity leave ended. A similar stance was taken in Canada where many thought breastfeeding after six months was unnecessary, and where maternity leave was six months long. Recent legislation in both countries has extended the length of maternity leave. Acknowledges that women from cultures which support breastfeeding are more likely to breastfeed their babies. (JSM)

2024-02961

Determinants of High Breastfeeding Self-Efficacy among Nursing Mothers in Najran, Saudi Arabia. Al-Thubaity DD, Alshahrani MA, Elgzar WT, et al (2023), Nutrients vol 15, no 8, April 2023, 1919

Many factors have been found to correlate with satisfactory Exclusive Breastfeeding (EBF) practices. The relationships between EBF practices and associated factors are complex and multidimensional; Breastfeeding Self-Efficacy (BSE) is the most important psychological factor that may help the mother to overcome any expected barriers. This study investigates the determinants of high breastfeeding self-efficacy among Saudi nursing mothers. Methods: This is a descriptive cross-sectional study investigating the determinant of BSE among 1577 nursing mothers in primary health centers in Najran City, Saudi Arabia. The study uses a cluster random sampling technique. Data collection was performed from June 2022 to January 2023 using a self-reported questionnaire that encompasses the Breastfeeding Self-Efficacy Scale—Short Form (BSES-SF), Gender Friendly Breastfeeding Knowledge Scale (GFBKS), Iowa Infant Feeding Attitude Scale (IIFAS), and a basic data questionnaire to assess women’s demographic factors and obstetric

history. Results: The mean score for all BSES-SF items was between 3.23–3.41, the highest mean score was in mothers who felt comfortable breastfeeding with family members present (3.41 ± 1.06), and the lowest mean was in mothers who could breastfeed their baby without using formula as a supplement (3.23 ± 0.94). The overall BSE score was high among 67% of the study participants. Binary logistic regression showed that being a housewife, being highly educated, having breastfeeding experience, and being multiparous are positive predictors for high BSE ($p \leq 0.001$). In addition, having adequate breastfeeding knowledge and positive breastfeeding attitudes were positively associated with higher BSE ($p = 0.000$). Conclusion: BSE can be predicted by modifiable predictors such as mothers' education, working status, parity, breastfeeding experience, adequate breastfeeding knowledge, and positive attitudes toward breastfeeding. If such predictors are considered during breastfeeding-related educational interventions, it could lead to more effective and sustainable effects in community awareness regarding breastfeeding. (Author)

Full URL: https://doi.org/10.3390/nu15081919

2024-02673

Factors Affecting BMI Changes in Mothers during the First Year Postpartum. Smethers AD, Trabulsi JC, Stallings VA, et al (2023), Nutrients vol 15, no 6, March 2023, 1364

We tested the hypotheses that mothers of infants who exclusively breastfed would differ in the trajectories of postpartum BMI changes than mothers of infants who exclusively formula fed, but such benefits would differ based on the maternal BMI status prepregnancy (primary hypothesis) and that psychological eating behavior traits would have independent effects on postpartum BMI changes (secondary hypothesis). To these aims, linear mixed-effects models analyzed measured anthropometric data collected monthly from 0.5 month (baseline) to 1 year postpartum from two groups of mothers distinct in infant feeding modality (Lactating vs. Non-lactating). While infant feeding modality group and prepregnancy BMI status had independent effects on postpartum BMI changes, the benefits of lactation on BMI changes differed based on prepregnancy BMI. When compared to lactating women, initial rates of BMI loss were significantly slower in the non-lactating women who were with Prepregnancy Healthy Weight ($\beta = 0.63$ percent BMI change, 95% CI: 0.19, 1.06) and with Prepregnancy Overweight ($\beta = 2.10$ percent BMI change, 95% CI: 1.16, 3.03); the difference was only a trend for those in the Prepregnancy Obesity group ($\beta = 0.60$ percent BMI change, 95% CI: −0.03, 1.23). For those with Prepregnancy Overweight, a greater percentage of non-lactating mothers (47%) gained ≥ 3 BMI units by 1 year postpartum than did lactating mothers (9%; $p < 0.04$). Psychological eating behavior traits of higher dietary restraint, higher disinhibition, and lower susceptibility to hunger were associated with greater BMI loss. In conclusion, while there are myriad advantages to lactation, including greater initial rates of postpartum weight loss regardless of prepregnancy BMI, mothers who were with overweight prior to the pregnancy experienced substantially greater loss if they breastfed their infants. Individual differences in psychological eating behavior traits hold promise as modifiable targets for postpartum weight management. (Author)

Full URL: https://doi.org/10.3390/nu15061364

2024-02648

Fucosylated Human Milk Oligosaccharides during the First 12 Postnatal Weeks Are Associated with Better Executive Functions in Toddlers. Willemsen Y, Beijers R, Gu F, et al (2023), Nutrients vol 15, no 6, March 2023, 1463

Human milk oligosaccharides (HMOs) are one of the most abundant solid components in a mother's milk. Animal studies have confirmed a link between early life exposure to HMOs and better cognitive outcomes in the offspring. Human studies on HMOs and associations with later child cognition are scarce. In this preregistered longitudinal study, we investigated whether human milk 2'-fucosyllactose, 3'-sialyllactose, 6'-sialyllactose, grouped fucosylated HMOs, and grouped sialylated HMOs, assessed during the first twelve postnatal weeks, are associated with better child executive functions at age three years. At infant age two, six, and twelve weeks, a sample of human milk was collected by mothers who were exclusively ($n = 45$) or partially breastfeeding ($n = 18$). HMO composition was analysed by use of porous graphitized carbon-ultra high-performance liquid chromatography–mass spectrometry. Executive functions were assessed at age three years with two executive function questionnaires independently filled in by mothers and their partners, and four behavioural tasks. Multiple regression analyses were performed in R. Results indicated that concentrations of 2'-fucosyllactose and grouped fucosylated HMOs were associated with better executive functions, while concentrations of grouped sialylated HMOs were associated with worse executive functions at age three years. Future studies on HMOs that sample frequently during the first months of life and experimental HMO administration studies in exclusively formula-fed infants can further reveal associations with child cognitive development and uncover potential causality and sensitive periods. (Author)

Full URL: https://doi.org/10.3390/nu15061463

2024-02578

Laid-back breastfeeding: knowledge, attitudes and practices of midwives and student midwives in Ireland. McGuigan M, Larkin P (2024), International Breastfeeding Journal vol 19, no 13, February 2024

Background
Despite concerted efforts by policy developers, health professionals and lay groups, breastfeeding rates in Ireland remain one of the lowest in world, with 63.6% of mothers initiating breastfeeding at birth, dropping to 37.6% of mothers breastfeeding exclusively on hospital discharge. Nipple trauma and difficulties with baby latching are major contributors to the introduction of formula and discontinuation of breastfeeding. Research shows laid-back breastfeeding (LBBF) significantly reduces breast problems such as sore and cracked nipples, engorgement, and mastitis as well as facilitating a better latch. Although the benefits of LBBF are well documented, this position does not seem to be routinely suggested to mothers as an option when establishing breastfeeding. This study aims to determine midwives' and student midwives' knowledge, attitudes, and practices of using laid-back breastfeeding in Ireland.

Method
A cross-sectional descriptive survey distributed to midwives and student midwives in three maternity hospitals in Ireland and two online midwifery groups based in the Republic of Ireland, during June, July, and August 2021.

Results
Two hundred and fifty-three valid responses were received from nine maternity units. Most participants (81.4%) were aware of laid-back breastfeeding. However, only 6.8% of respondents cited it as the position they most frequently use. Over one-third (38.34%) had never used this position with mothers. Those more likely to suggest LBBF had personal experience of it, were lactation consultants or working towards qualification, or had participated in specific education about LBBF. Barriers included lack of education, confidence, time, and experience. Further issues related to work culture, a tendency to continue using more familiar positions and concerns about mothers' anatomy and mothers' unfamiliarity with LBBF.

Conclusion
Although there was a high level of awareness of laid-back breastfeeding among midwives and student midwives, there are challenges preventing its use in practice. Education specifically related to using LBBF in practice is required to overcome the barriers identified. A greater understanding of mothers' and babies' intrinsic feeding capacities may give midwives more confidence to recommend this method as a first choice, potentially leading to more successful breastfeeding establishment and maintenance. (Author)

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2024-00764

Sources, Production, and Clinical Treatments of Milk Fat Globule Membrane for Infant Nutrition and Well-Being. Fontecha J, Brink L, Wu S, et al (2020), Nutrients vol 12, no 6, June 2020, p 1633

Research on milk fat globule membrane (MFGM) is gaining traction. The interest is two-fold; on the one hand, it is a unique trilayer structure with specific secretory function. On the other hand, it is the basis for ingredients with the presence of phospho- and sphingolipids and glycoproteins, which are being used as food ingredients with valuable functionality, in particular, for use as a supplement in infant nutrition. This last application is at the center of this Review, which aims to contribute to understanding MFGM's function in the proper development of immunity, cognition, and intestinal trophism, in addition to other potential effects such as prevention of diseases including cardiovascular disease, impaired bone turnover and inflammation, skin conditions, and infections as well as age-associated cognitive decline and muscle loss. The phospholipid composition of MFGM from bovine milk is quite like human milk and, although there are some differences due to dairy processing, these do not result in a chemical change. The MFGM ingredients, as used to improve the formulation in different clinical studies, have indeed increased the presence of phospholipids, sphingolipids, glycolipids, and glycoproteins with the resulting benefits of different outcomes (especially immune and cognitive outcomes) with no reported adverse effects. Nevertheless, the precise mechanism(s) of action of MFGM remain to be elucidated and further basic investigation is warranted. (Author)

Full URL: https://doi.org/10.3390/nu12061633

2024-00717

Profiles of Human Milk Oligosaccharides and Their Relations to the Milk Microbiota of Breastfeeding Mothers in

Dubai. Moubareck CA, Lootah M, Tahlak MA, et al (2020), Nutrients vol 12, no 6, June 2020, p 1727

The composition of human breast milk is affected by several factors, including genetics, geographic location and maternal nutrition. This study investigated the human milk oligosaccharides (HMOs) of breastfeeding mothers living in Dubai and their relations with the milk microbiota. A total of 30 breast milk samples were collected from healthy Emirati and UAE-expatriates at Latifa Hospital. HMO profiling was performed using UHPLC-MS. Microbiota profiles were determined by sequencing amplicons of the V3-V4 region of the 16S rRNA gene. HMO concentrations were significantly higher in Emirati, and dropped with the lactation period in both groups of mothers. The Le (a−b+)-secretor (Le+Se+) type was the most abundant in Dubai mothers (60%), followed by the Le(a−b−)-secretor (Le−Se+) type (23%). Bifidobacterium and Lactobacillus were considerably lower in Dubai-based mothers, while Pseudomonas and Delftia (Hydrogenophaga) were detected at a higher abundance compared to mothers from other countries. Atopobium was correlated with sialyl-lacto-N-tetraose c, Leptotrichia and Veillonella were correlated with 6'-sialyl-lactose, and Porphyromonas was correlated with lacto-N-hexaose. The study highlights the HMO profiles of breastfeeding mothers in Dubai and reveals few correlations with milk microbial composition. Targeted genomic analyses may help in determining whether these differences are due to genetic variations or to sociocultural and environmental factors. (Author)

Full URL: https://doi.org/10.3390/nu12061727

2024-00659

Microbiota Composition of Breast Milk from Women of Different Ethnicity from the Manawatu—Wanganui Region of New Zealand. Butts CA, Paturi G, Blatchford P, et al (2020), Nutrients vol 12, no 6, June 2020, p 1756

Human breastmilk components, the microbiota and immune modulatory proteins have vital roles in infant gut and immune development. In a population of breastfeeding women (n = 78) of different ethnicities (Asian, Māori and Pacific Island, New Zealand European) and their infants living in the Manawatu–Wanganui region of New Zealand, we examined the microbiota and immune modulatory proteins in the breast milk, and the fecal microbiota of mothers and infants. Breast milk and fecal samples were collected over a one-week period during the six to eight weeks postpartum. Breast milk microbiota differed between the ethnic groups. However, these differences had no influence on the infant's gut microbiota composition. Based on the body mass index (BMI) classifications, the mother's breast milk and fecal microbiota compositions were similar between normal, overweight and obese individuals, and their infant's fecal microbiota composition also did not differ. The relative abundance of bacteria belonging to the Bacteroidetes phylum was higher in feces of infants born through vaginal delivery. However, the bacterial abundance of this phylum in the mother's breast milk or feces was similar between women who delivered vaginally or by cesarean section. Several immune modulatory proteins including cytokines, growth factors, and immunoglobulin differed between the BMI and ethnicity groups. Transforming growth factor beta 1 and 2 (TGFβ1, TGFβ2) were present in higher concentrations in the milk from overweight mothers compared to those of normal weight. The TGFβ1 and soluble cluster of differentiation 14 (sCD14) concentrations were significantly higher in the breast milk from Māori and Pacific Island women compared with women from Asian and NZ European ethnicities. This study explores the relationship between ethnicity, body mass index, mode of baby delivery and the microbiota of infants and their mothers and their potential impact on infant health. (Author)

Full URL: https://doi.org/10.3390/nu12061756

2024-00656

A Comparison of Vitamin and Lutein Concentrations in Breast Milk from Four Asian Countries. Nguyen TT, Kim J, Lee H, et al (2020), Nutrients vol 12, no 6, June 2020, p 1794

Vitamins are the essential elements for human life and, particularly, for infant health. Human milk is the best source of nutrients for newborns, however, the information of vitamins in Asian maternal milk is still limited. In this study, we have collected 580 Asian maternal milk samples from Korea (n = 254), China (n = 137), Pakistan (n = 92), and Vietnam (n = 97). The vitamin concentrations, including vitamin B-groups (8 vitamins), fat-soluble vitamin (retinol, D, E, K) and lutein in the breast milk of were investigated. The concentration of thiamin (B1), biotin (B7), and folic acid (B9) in mother's milk of four countries were not considerably different, while riboflavin (B2), pantothenic acid (B5), and pyridoxine (B6) level in Vietnam samples were significantly lower than those in other countries. In contrast, retinol (A) and tocopherol (E) were found to be higher levels in Vietnamese maternal milk. Korean and Chinese maternal milk had low concentrations of retinol that may cause vitamin A deficiency in children. However, Chinese mother's milk was distinguished with a high concentration of lutein. Pakistani mother's milk was observed as having a significant problem of folic acid (B9) deficiency. Regardless of the country, vitamin B12, K, and D did not seem to be provided sufficiently through maternal milk. The moderate positive correlations were found between vitamin concentrations in each country and the pooled sample. The data obtained in this study were able to provide vital

information to assess the nutritional status of breast milk in Asian countries and contributed to the efforts of ensuring the best nutrition for Asian children. (Author)

Full URL: https://doi.org/10.3390/nu12061794

2024-00651

New Insights in Preterm Nutrition. Roggero P, Liotto N, Menis C, et al (2020), Nutrients vol 12, no 6, June 2020, p 1857

Nutrition of preterm infants has a crucial role in the promotion of organ's optimal growth and development. In recent years, much has been researched, discussed and written on the ideal nutritional approach, suitable growth and the possible short- and long-term health consequences related to over- or undernutrition and inappropriate growth.

Sir David Cuthbertson emphasized that "we all owe our foetal life till parturition to the passage of the nutrients we require from the blood vessels of our mothers into our blood vessels as they traverse the chorionic villi in a close relation". Therefore, "intravenous feeding" is crucial in preterm infants who need parenteral nutrition for sustaining postnatal life, as "intrauterine feeding" ends abruptly with the clamping of the umbilical cord at birth. Preterm birth interrupts the physiological growth path of the foetus that occurs during the third trimester of pregnancy. At this stage, it is known that the foetus has a rapid growth phase that can hardly be maintained by the preterm infant due to changes in the environment related to birth. The environment to which preterm infants are exposed is very different from the maternal uterus and causes an increase in their energy expenditure due to the need to maintain thermal and metabolic homeostasis. Based on this scenario, it is crucial to define the nutritional management (in terms of intakes, timing and modalities) of preterm infants to ensure their adequate growth and development. (Author)

Full URL: https://doi.org/10.3390/nu12061857

2024-00650

The Potential Effects of Human Milk on Morbidity in Very-Low-Birth-Weight Preterm Infants. Roggero P, Liotto N, Amato O, et al (2020), Nutrients vol 12, no 6, June 2020, p 1882

Improvements in quality of care have led to a significant reduction in mortality and morbidity in preterm infants, especially very-low-birth-weight (VLBW) infants. Consequently, more efforts are increasingly being made to improve their long-term health.

A central factor of long-term health is nutritional care, and human milk is considered essential in reducing the incidence of comorbidities and improving long-term outcomes. Indeed, it is well known that human milk is the optimal food source for newborns, primarily preterm infants, and that donor human milk is the best alternative when the mother's milk is not available or is insufficient. (Author)

Full URL: https://doi.org/10.3390/nu12061882

2024-00604

Human Milk and Lactation. Gianni ML, Morniroli D, Bettinelli ME, et al (2020), Nutrients vol 12, no 4, April 2020, p 899

The Special Issue, Human Milk and Lactation, has focused on the variability of human milk compounds depending on individual differences among mothers and, more significantly, on mothers' nutritional status and anthropometric characteristics. All authors within the issue have outlined the importance of a healthy lifestyle and a correct micro and macronutrient intake, before and during pregnancy and lactation, in order to promote adequate levels of vitamins and other components in human milk. Recommendations made have highlighted the need to identify women at risk of a deficiency, who could benefit from an appropriate supplementation aimed at increasing breastmilk micronutrient content.

The more the exceptional qualities of human milk are brought up, the more the support of breastfeeding initiation and duration becomes fundamental. Breastfeeding rates are still lower than recommended, especially in developed countries. The authors have highlighted the association between breastfeeding difficulties in the first months of lactation and early breastfeeding cessation and advocated the provision of continued tailored breastfeeding support, including after hospital discharge. Within this context, the effectiveness of online sources, including an expert instructional video, have been explored. Improving maternal knowledge and confidence regarding antenatal colostrum expressing, which in turn may promote long term breastfeeding, is foundational. (Author, edited)

Full URL: https://doi.org/10.3390/nu12040899

2024-00583

Nuclear Magnetic Resonance Metabolomics Reveals Qualitative and Quantitative Differences in the Composition of Human Breast Milk and Milk Formulas. Garwolińska D, Hewelt-Belka W, Kot-Wasik A, et al (2020), Nutrients vol 12, no 4, April 2020, p 921

Commercial formula milk (FM) constitutes the best alternative to fulfill the nutritional requirements of infants when breastfeeding is precluded. Here, we present the comparative study of polar metabolite composition of human breast milk (HBM) and seven different brands of FM by nuclear magnetic resonance spectroscopy. The results of the multivariate data analysis exposed qualitative and quantitative differences between HBM and FM composition as well as within FM of various brands and in HBM itself (between individual mothers and lactation period). Several metabolites were found exclusively in HBM and FM. Statistically significant higher levels of isoleucine and methionine in their free form were detected in FM samples based on caprine milk, while FM samples based on bovine milk showed a higher level of glucose and galactose in comparison to HBM. The results suggest that the amelioration of FM formulation is imperative to better mimic the composition of minor nutrients in HBM. (Author)

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2024-00574

The Impact of Maternal Obesity on Human Milk Macronutrient Composition: A Systematic Review and Meta-Analysis. Leghi GE, Netting MJ, Middleton PF, et al (2020), Nutrients vol 12, no 4, April 2020, p 934

Maternal obesity has been associated with changes in the macronutrient concentration of human milk (HM), which have the potential to promote weight gain and increase the long-term risk of obesity in the infant. This article aimed to provide a synthesis of studies evaluating the effects of maternal overweight and obesity on the concentrations of macronutrients in HM. EMBASE, MEDLINE/PubMed, Cochrane Library, Scopus, Web of Science, and ProQuest databases were searched for relevant articles. Two authors conducted screening, data extraction, and quality assessment independently. A total of 31 studies (5078 lactating women) were included in the qualitative synthesis and nine studies (872 lactating women) in the quantitative synthesis. Overall, maternal body mass index (BMI) and adiposity measurements were associated with higher HM fat and lactose concentrations at different stages of lactation, whereas protein concentration in HM did not appear to differ between overweight and/or obese and normal weight women. However, given the considerable variability in the results between studies and low quality of many of the included studies, further research is needed to establish the impact of maternal overweight and obesity on HM composition. This is particularly relevant considering potential implications of higher HM fat concentration on both growth and fat deposition during the first few months of infancy and long-term risk of obesity. (Author)

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2024-00567

Breast Milk, a Source of Beneficial Microbes and Associated Benefits for Infant Health. Lyons KE, Ryan CA, Dempsey EM, et al (2020), Nutrients vol 12, no 4, April 2020, p 1039

Human breast milk is considered the optimum feeding regime for newborn infants due to its ability to provide complete nutrition and many bioactive health factors. Breast feeding is associated with improved infant health and immune development, less incidences of gastrointestinal disease and lower mortality rates than formula fed infants. As well as providing fundamental nutrients to the growing infant, breast milk is a source of commensal bacteria which further enhance infant health by preventing pathogen adhesion and promoting gut colonisation of beneficial microbes. While breast milk was initially considered a sterile fluid and microbes isolated were considered contaminants, it is now widely accepted that breast milk is home to its own unique microbiome. The origins of bacteria in breast milk have been subject to much debate, however, the possibility of an entero-mammary pathway allowing for transfer of microbes from maternal gut to the mammary gland is one potential pathway. Human milk derived strains can be regarded as potential probiotics; therefore, many studies have focused on isolating strains from milk for subsequent use in infant health and nutrition markets. This review aims to discuss mammary gland development in preparation for lactation as well as explore the microbial composition and origins of the human milk microbiota with a focus on probiotic development. (Author)

Full URL: https://doi.org/10.3390/nu12041039

2024-00566

Understanding the Elements of Maternal Protection from Systemic Bacterial Infections during Early Life. Kleist SA, Knoop KA (2020), Nutrients vol 12, no 4, April 2020, p 1045

Late-onset sepsis (LOS) and other systemic bloodstream infections are notable causes of neonatal mortality, particularly in prematurely born very low birth weight infants. Breastfeeding in early life has numerous health benefits, impacting the health of the newborn in both the short-term and in the long-term. Though the known benefits of an exclusive mother's own milk diet in early life have been well recognized and described, it is less understood how breastfed infants enjoy a potential reduction in risk of LOS and other systemic infections. Here we

review how gut residing pathogens within the intestinal microbiota of infants can cause a subset of sepsis cases and the components of breastmilk that may prevent the dissemination of pathogens from the intestine. (Author)
Full URL: https://doi.org/10.3390/nu12041045

2024-00564

Dose-Response Relationships between Breastfeeding and Postpartum Weight Retention Differ by Pre-Pregnancy Body-Mass Index in Taiwanese Women. Waits A, Guo C-Y, Chang YS, et al (2020), Nutrients vol 12, no 4, April 2020, p 1065

Postpartum weight retention (PWR) is a risk factor for future obesity. The role of breastfeeding in reducing PWR is not fully understood. We examined the relationship between PWR and the duration of exclusive/partial breastfeeding in 52,367 postpartum women from 2012–2016 Taiwan national breastfeeding surveys. The women were interviewed at 7–14 months postpartum. Non-linear models were fit to examine the association between PWR and breastfeeding duration. PWR adjusted means and 95% confidence intervals were plotted and compared for the duration of exclusive/partial breastfeeding in the total sample and between pre-pregnancy body-mass index (BMI) groups (underweight, normal, overweight, and obese). Women who breastfed exclusively for >30 days showed significantly lower PWR than those who did not breastfeed and those who breastfed partially for the same duration, thereafter each additional duration of 30 days being associated with an average of 0.1–0.2 kg less PWR. Women who breastfed partially for 120 days showed lower PWR than those who did not or those who ceased to breastfeed, thereafter each additional duration of 30 days being associated with an average of 0.1 kg less PWR. Duration of breastfeeding needed to achieve significantly less PWR differed between pre-pregnancy BMI groups, but the effect of exclusive breastfeeding appeared earlier in the normal weight group. Women with obesity who breastfed exclusively for >30 or partially for >180 days, had lower PWR than non-obese groups. The observed dose–response relationship between breastfeeding duration and PWR supports the “every feeding matters” approach in breastfeeding promotion. The larger effect of exclusive and partial breastfeeding on PWR in women with obesity may draw special attention of breastfeeding promotion. (Author)

Full URL: https://doi.org/10.3390/nu12041065

2024-00563

Response of the Human Milk Microbiota to a Maternal Prebiotic Intervention Is Individual and Influenced by Maternal Age. Padilha M, Brejnrod A, Danneskiold-Samsøe N, et al (2020), Nutrients vol 12, no 4, April 2020, p 1081

Maternal bacteria are shared with infants via breastfeeding. Prebiotics modulate the gut microbiota, promoting health benefits. We investigated whether the maternal diet supplementation with a prebiotic (fructooligosaccharides, FOS) could influence the milk microbiota. Twenty-eight lactating women received 4.5 g of fructooligosaccharides + 2 g of maltodextrin (FOS group) and twenty-five received 2 g of maltodextrin (placebo group) for 20 days. Breast-milk samples were taken before and after the intervention. The DNA from samples was used for 16S rRNA sequencing. No statistical differences between the groups were found for the bacterial genera after the intervention. However, the distances of the trajectories covered by paired samples from the beginning to the end of the supplementation were higher for the FOS group ($p = 0.0007$) indicating greater changes in milk microbiota compared to the control group. Linear regression models suggested that the maternal age influenced the response for FOS supplementation ($p = 0.02$). Interestingly, the pattern of changes to genus abundance upon supplementation was not shared between mothers. We demonstrated that manipulating the human milk microbiota through prebiotics is possible, and the maternal age can affect this response. (Author)

Full URL: https://doi.org/10.3390/nu12041081

2024-00558

Does Caesarean Section or Preterm Delivery Influence TGF-β2 Concentrations in Human Colostrum?. Kociszewska-Najman B, Sibanda EL, Radomska-Leśniewska DM, et al (2020), Nutrients vol 12, no 4, April 2020, p 1095

Human colostrum (HC) is a rich source of immune mediators that play a role in immune defences of a newly born infant. The mediators include transforming growth factor β (TGF-β) which exists in three isoforms that regulate cellular homeostasis and inflammation, can induce or suppress immune responses, limit T helper 1 cells (Th1) reactions and stimulate secretory immunoglobulin A (IgA) production. Human milk TGF-β also decreases apoptosis of intestinal cells and suppresses macrophage cytokine expression. The aim of the study was to determine the concentration of TGF-β2 in HC obtained from the mothers who delivered vaginally (VD) or by caesarean section (CS), and to compare the concentrations in HC from mothers who delivered at term (TB) or preterm (PB). In this study, 56% of preterm pregnancies were delivered via CS. The concentrations of TGF-β2 were measured in HC from 299 women who delivered in the 1st Department of Obstetrics and Gynaecology, Medical University of Warsaw: 192 (VD), 107 (CS),

251 (TB), and 48 (PB). The colostrum samples were collected within 5 days post-partum. TGF-β2 levels in HC were measured by the enzyme-linked immunosorbent assay (ELISA) test with the Quantikine ELISA Kit-Human TGF-β2 (cat.no. SB250). Statistical significance between groups was calculated by the Student t-test using StatSoft Statistica 13 software. The mean TGF-β2 concentration in patients who delivered at term or preterm were comparable. The levels of TGF-β2 in HC were higher after preterm than term being 4648 vs. 3899 ng/mL (p = 0.1244). The delivery via CS was associated with higher HC concentrations of TGF-β2. The levels of TGF-β2 were significantly higher in HC after CS than VD (7429 vs. 5240 ng/mL; p = 0.0017). The data from this study suggest: caesarean section was associated with increased levels of TGF-β2 in HC. The increased levels of TGF-β2 in HC of women who delivered prematurely require further research. Early and exclusive breast-feeding by mothers after caesarean section and premature births with colostrum containing high TGF-β2 levels may prevent the negative impact of pathogens which often colonize the gastrointestinal tract and may reduce the risk of chronic diseases in this group of patients. (Author)

Full URL: https://doi.org/10.3390/nu12041095

2024-00556

The Impact of Dietary Fucosylated Oligosaccharides and Glycoproteins of Human Milk on Infant Well-Being.
Orczyk-Pawiłowicz M, Lis-Kuberka J (2020), Nutrients vol 12, no 4, April 2020, p 1105

Apart from optimal nutritional value, human milk is the feeding strategy to support the immature immunological system of developing newborns and infants. The most beneficial dietary carbohydrate components of breast milk are human milk oligosaccharides (HMOs) and glycoproteins (HMGs), involved in both specific and nonspecific immunity. Fucosylated oligosaccharides represent the largest fraction of human milk oligosaccharides, with the simplest and the most abundant being 2′-fucosyllactose (2′-FL). Fucosylated oligosaccharides, as well as glycans of glycoproteins, as beneficial dietary sugars, elicit anti-adhesive properties against fucose-dependent pathogens, and on the other hand are crucial for growth and metabolism of beneficial bacteria, and in this aspect participate in shaping a healthy microbiome. Well-documented secretor status related differences in the fucosylation profile of HMOs and HMGs may play a key but underestimated role in assessment of susceptibility to fucose-dependent pathogen infections, with a potential impact on applied clinical procedures. Nevertheless, due to genetic factors, about 20% of mothers do not provide their infants with beneficial dietary carbohydrates such as 2′-FL and other α1,2-fucosylated oligosaccharides and glycans of glycoproteins, despite breastfeeding them. The lack of such structures may have important implications for a wide range of aspects of infant well-being and healthcare. In light of the above, some artificial mixtures used in infant nutrition are supplemented with 2′-FL to more closely approximate the unique composition of maternal milk, including dietary-derived fucosylated oligosaccharides and glycoproteins. (Author)

Full URL: https://doi.org/10.3390/nu12041105

2024-00429

The Therapeutic Potential of Breast Milk-Derived Extracellular Vesicles. Galley JD, Besner GE (2020), Nutrients vol 12, no 3, March 2020, p 745

In the past few decades, interest in the therapeutic benefits of exosomes and extracellular vesicles (EVs) has grown exponentially. Exosomes/EVs are small particles which are produced and exocytosed by cells throughout the body. They are loaded with active regulatory and stimulatory molecules from the parent cell including miRNAs and enzymes, making them prime targets in therapeutics and diagnostics. Breast milk, known for years to have beneficial health effects, contains a population of EVs which may mediate its therapeutic effects. This review offers an update on the therapeutic potential of exosomes/EVs in disease, with a focus on EVs present in human breast milk and their remedial effect in the gastrointestinal disease necrotizing enterocolitis. Additionally, the relationship between EV miRNAs, health, and disease will be examined, along with the potential for EVs and their miRNAs to be engineered for targeted treatments. (Author)

Full URL: https://doi.org/10.3390/nu12030745

2024-00415

Human Milk Oligosaccharide Profile Variation Throughout Postpartum in Healthy Women in a Brazilian Cohort. Ferreira AL, Alves R, Figueiredo A, et al (2020), Nutrients vol 12, no 3, March 2020, p 790

Human milk oligosaccharide (HMO) composition varies throughout lactation and can be influenced by maternal characteristics. This study describes HMO variation up to three months postpartum and explores the influences of maternal sociodemographic and anthropometric characteristics in a Brazilian prospective cohort. We followed 101 subjects from 28–35 gestational weeks (baseline) and throughout lactation at 2–8 (visit 1), 28–50 (visit 2) and 88–119 days postpartum (visit 3). Milk samples were collected at visits 1, 2 and 3, and 19 HMOs were quantified usinghigh-performance liquid chromatography with fluorescence detection (HPLC-FL). Friedman post-hoc test,

Spearman rank correlation for maternal characteristics and HMOs and non-negative matrix factorization (NMF) were used to define the HMO profile. Most women were secretors (89.1%) and presented high proportion of 2'-fucosyllactose (2'FL) at all three sample times, while lacto-N-tetraose (LNT, 2–8 days) and lacto-N-fucopentaose II (LNFPII, 28–50 and 88–119 days) were the most abundant HMOs in non-secretor women. Over the course of lactation, total HMO weight concentrations (g/L) decreased, but total HMO molar concentrations (mmol/L) increased, highlighting differential changes in HMO composition over time. In addition, maternal pre-pregnancy body mass index (BMI) and parity influence the HMO composition in healthy women in this Brazilian cohort. (Author)

Full URL: https://doi.org/10.3390/nu12030790

2024-00403

Influence of Maternal Milk on the Neonatal Intestinal Microbiome. Gopalakrishna KP, Hand TW (2020), Nutrients vol 12, no 3, March 2020, p 823

The intestinal microbiome plays an important role in maintaining health throughout life. The microbiota develops progressively after birth and is influenced by many factors, including the mode of delivery, antibiotics, and diet. Maternal milk is critically important to the development of the neonatal intestinal microbiota. Different bioactive components of milk, such as human milk oligosaccharides, lactoferrin, and secretory immunoglobulins, modify the composition of the neonatal microbiota. In this article, we review the role of each of these maternal milk-derived bioactive factors on the microbiota and how this modulation of intestinal bacteria shapes health, and disease. (Author)

Full URL: https://doi.org/10.3390/nu12030823

2024-00389

Growth, Feeding Tolerance and Metabolism in Extreme Preterm Infants under an Exclusive Human Milk Diet. Eibensteiner F, Jilma B, Thanhaeuser M, et al (2019), Nutrients vol 11, no 7, July 2019, p 1443

Background: For preterm infants, human milk (HM) has to be fortified to cover their enhanced nutritional requirements and establish adequate growth. Most HM fortifiers are based on bovine protein sources (BMF). An HM fortifier based on human protein sources (HMF) has become available in the last few years. The aim of this study is to investigate the impact of an HMF versus BMF on growth in extremely low birth weight (ELBW, <1000 g) infants. Methods: This was a retrospective, controlled, multicenter cohort study in infants with a birthweight below 1000 g. The HMF group received an exclusive HM diet up to 32+0 weeks of gestation and was changed to BMF afterwards. The BMF group received HM+BMF from fortifier introduction up to 37+0 weeks. Results: 192 extremely low birth weight (ELBW)-infants were included (HMF n = 96, BMF n = 96) in the study. After the introduction of fortification, growth velocity up to 32+0 weeks was significantly lower in the HMF group (16.5 g/kg/day) in comparison to the BMF group (18.9 g/kg/day, p = 0.009) whereas all other growth parameters did not differ from birth up to 37+0 weeks. Necrotizing enterocolitis (NEC) incidence was 10% in the HMF and 8% in the BMF group. Conclusion: Results from this study do not support the superiority of HFM over BMF in ELBW infants. (Author)

Full URL: https://doi.org/10.3390/nu11071443

2024-00387

Prevention of Allergic Sensitization and Treatment of Cow's Milk Protein Allergy in Early Life: The Middle-East Step-Down Consensus. Vandenplas Y, Al-Hussaini BH, Al-Mannaei K, et al (2019), Nutrients vol 11, no 7, July 2019, p 1444

Allergy risk has become a significant public health issue with increasing prevalence. Exclusive breastfeeding is recommended for the first six months of life, but this recommendation is poorly adhered to in many parts of the world, including the Middle-East region, putting infants at risk of developing allergic sensitization and disorders. When breastfeeding is not possible or not adequate, a partially hydrolyzed whey formula (pHF-W) has shown proven benefits of preventing allergy, mainly atopic eczema, in children with a genetic risk. Therefore, besides stimulating breastfeeding, early identification of infants at risk for developing atopic disease and replacing commonly used formula based on intact cow milk protein (CMP) with a clinically proven pHF-W formula is of paramount importance for allergy prevention. If the child is affected by cow's milk protein allergy (CMPA), expert guidelines recommend extensively hydrolyzed formula (eHF), or an amino acid formula (AAF) in case of severe symptoms. The Middle-East region has a unique practice of utilizing pHF-W as a step-down between eHF or AAF and intact CMP, which could be of benefit. The region is very heterogeneous with different levels of clinical practice, and as allergic disorders may be seen by healthcare professionals of different specialties with different levels of expertise, there is a great variability in preventive and treatment approaches within the region itself. During a consensus meeting, a new approach was discussed and unanimously approved by all participants, introducing the use of pHF-W in the therapeutic management

of CMPA. This novel approach could be of worldwide benefit. (Author)
Full URL: https://doi.org/10.3390/nu11071444

2024-00380

Carbohydrates in Human Milk and Body Composition of Term Infants during the First 12 Months of Lactation. Gridneva D, Rea A, Tie WJ, et al (2019), Nutrients vol 11, no 7, July 2019, p 1472

Human milk (HM) carbohydrates may affect infant appetite regulation, breastfeeding patterns, and body composition (BC). We investigated relationships between concentrations/calculated daily intakes (CDI) of HM carbohydrates in first year postpartum and maternal/term infant BC, as well as breastfeeding parameters. BC of dyads (n = 20) was determined at 2, 5, 9, and/or 12 months postpartum using ultrasound skinfolds (infants) and bioelectrical impedance spectroscopy (infants/mothers). Breastfeeding frequency, 24-h milk intake and total carbohydrates (TCH) and lactose were measured to calculate HM oligosaccharides (HMO) concentration and CDI of carbohydrates. Statistical analysis used linear regression/mixed effects models; results were adjusted for multiple comparisons. Higher TCH concentrations were associated with greater infant length, weight, fat-free mass (FFM), and FFM index (FFMI), and decreased fat mass (FM), FM index (FMI), %FM and FM/FFM ratio. Higher HMO concentrations were associated with greater infant FFM and FFMI, and decreased FMI, %FM, and FM/FFM ratio. Higher TCH CDI were associated with greater FM, FMI, %FM, and FM/FFM ratio, and decreased infant FFMI. Higher lactose CDI were associated with greater FM, FMI, %FM, and FM/FFM, ratio and decreased FFMI. Concentrations and intakes of HM carbohydrates differentially influence development of infant BC in the first 12 months postpartum, and may potentially influence risk of later obesity via modulation of BC. (Author)

Full URL: https://doi.org/10.3390/nu11071472

2024-00363

Preconception Health Attitudes and Behaviours of Women: A Qualitative Investigation. Khan NN, Boyle JA, Lang AY, et al (2019), Nutrients vol 11, no 7, July 2019, p 1490

The preconception period is a critical window in which maternal health can profoundly affect both individual and intergenerational health. Despite its importance, little information about women's preconception health attitudes, behaviours and information preferences exists, yet these details are vital to inform targeted health communication. Semi-structured interviews were conducted to explore women's attitudes to preconception health (areas of importance, support sources, enablers and barriers), behaviours (information seeking and health actions taken) and information preferences. Interviews were transcribed, coded and thematically analysed. Fifteen women participated (n = 7 preconception, n = 7 pregnant and n = 1 postpartum). Women perceived optimising lifestyle behaviours including a healthy diet, regular physical activity, reducing alcohol intake and pre-pregnancy vitamin supplementation as important preconception health actions to adopt. Few women acknowledged the importance of formal preconception health checks and screening with health professionals. Barriers to achieving health behaviour change included anxiety, stress and challenges obtaining reputable information. Participants reported a lack of preconception information about supplementation requirements, safe foods and exercise recommendations. Information preferences included the internet or their general practitioner. Whilst women predominantly prioritised optimising diet and physical activity prior to pregnancy, there appeared to be limited awareness of preconception health checks and screening, highlighting a need for broader awareness of overall preconception health and wellbeing. (Author)

Full URL: https://doi.org/10.3390/nu11071490

2024-00307

Longitudinal Analysis of Macronutrient Composition in Preterm and Term Human Milk: A Prospective Cohort Study. Fumeaux CJF, Garcia-Rodenas CL, De Castro CA, et al (2019), Nutrients vol 11, no 7, July 2019, p 1525

Background: Mother's own milk is the optimal source of nutrients and provides numerous health advantages for mothers and infants. As they have supplementary nutritional needs, very preterm infants may require fortification of human milk (HM). Addressing HM composition and variations is essential to optimize HM fortification strategies for these vulnerable infants. Aims: To analyze and compare macronutrient composition in HM of mothers lactating very preterm (PT) (28 0/7 to 32 6/7 weeks of gestational age, GA) and term (T) infants (37 0/7 to 41 6/7 weeks of GA) over time, both at similar postnatal and postmenstrual ages, and to investigate other potential factors of variations. Methods: Milk samples from 27 mothers of the PT infants and 34 mothers of the T infants were collected longitudinally at 12 points in time during four months for the PT HM and eight points in time during two months for the T HM. Macronutrient composition (proteins, fat, and lactose) and energy were measured using a mid-infrared milk analyzer, corrected by bicinchoninic acid (BCA) assay for total protein content. Results: Analysis of 500 HM samples revealed large inter- and intra-subject variations in both groups. Proteins decreased from birth to four months in the

PT and the T HM without significant differences at any postnatal time point, while it was lower around term equivalent age in PT HM. Lactose content remained stable and comparable over time. The PT HM contained significantly more fat and tended to be more caloric in the first two weeks of lactation, while the T HM revealed higher fat and higher energy content later during lactation (three to eight weeks). In both groups, male gender was associated with more fat and energy content. The gender association was stronger in the PT group, and it remained significant after adjustments. Conclusion: Longitudinal measurements of macronutrients compositions of the PT and the T HM showed only small differences at similar postnatal stages in our population. However, numerous differences exist at similar postmenstrual ages. Male gender seems to be associated with a higher content in fat, especially in the PT HM. This study provides original information on macronutrient composition and variations of HM, which is important to consider for the optimization of nutrition and growth of PT infants. (Author)

Full URL: https://doi.org/10.3390/nu11071525

2024-00305

Human Breast Milk Promotes the Secretion of Potentially Beneficial Metabolites by Probiotic Lactobacillus reuteri DSM 17938. Mai T, Tran D, Roos S, et al (2019), Nutrients vol 11, no 7, July 2019, p 1548

Human breast milk (HBM) may have beneficial effects on Lactobacillus reuteri DSM 17938 (LR 17938) -mediated immunomodulation. We aimed to determine the effects of HBM on proliferation of LR 17938 in vitro and its associated proteins and metabolites in culture, in order to provide mechanistic insights into the health benefits of LR 17938. LR 17938 was cultured anaerobically in MRS bacterial culture media, HBM (from 6 mothers), and 2 types of cow-milk formula. The colony-forming unit (CFU) was calculated to evaluate LR 17938 growth. Sixteen-hour-fermented supernatants were used for metabolomics, and bacterial lysates were used for proteomics analysis. We found that growth of LR 17938 was 10 times better in HBM than in formula. We detected 261/452 metabolites upregulated when LR 17938 cultured in HBM compared to in formula, mainly participating in the glyoxylate cycle (succinate), urea cycle (citrulline), methionine methylation (N-acetylcysteine), and polyamine synthesis (spermidine). The significantly up-regulated enzymes were also involved in the formation of acetyl-CoA in the glyoxylate cycle and the antioxidant N-acetylcysteine. In conclusion, HBM enhances the growth of LR 17938 compared to formula and promotes LR 17938-associated metabolites that relate to energy and antioxidant status, which may be linked to the physiological effects of L. reuteri. (Author)

Full URL: https://doi.org/10.3390/nu11071548

2024-00300

Antenatal Influenza A-Specific IgA, IgM, and IgG Antibodies in Mother's Own Breast Milk and Donor Breast Milk, and Gastric Contents and Stools from Preterm Infants. Demers-Mathieu V, Huston R, Markell AM, et al (2019), Nutrients vol 11, no 7, July 2019, p 1567

Antenatal milk anti-influenza antibodies may provide additional protection to newborns until they are able to produce their own antibodies. To evaluate the relative abundance of milk, we studied the antibodies specific to influenza A in feeds and gastric contents and stools from preterm infants fed mother's own breast milk (MBM) and donor breast milk (DBM). Feed (MBM or DBM) and gastric contents (MBM or DBM at 1 h post-ingestion) and stool samples (MBM/DBM at 24 h post-ingestion) were collected, respectively, from 20 preterm (26–36 weeks gestational age) mother-infant pairs at 8–9 days and 21–22 days of postnatal age. Samples were analyzed via ELISA for anti-H1N1 hemagglutinin (anti-H1N1 HA) and anti-H3N2 neuraminidase (anti-H3N2 NA) specificity across immunoglobulin A (IgA), immunoglobulin M (IgM), and immunoglobulin G (IgG) isotypes. The relative abundance of influenza A-specific IgA in feeds and gastric contents were higher in MBM than DBM at 8–9 days of postnatal age but did not differ at 21–22 days. Anti-influenza A-specific IgM was higher in MBM than in DBM at both postnatal times in feed and gastric samples. At both postnatal times, anti-influenza A-specific IgG was higher in MBM than DBM but did not differ in gastric contents. Gastric digestion reduced anti-H3N2 NA IgG from MBM at 21–22 days and from DBM at 8–9 days of lactation, whereas other anti-influenza A antibodies were not digested at either postnatal times. Supplementation of anti-influenza A-specific antibodies in DBM may help reduce the risk of influenza virus infection. However, the effective antibody dose required to induce a significant protective effect remains unknown. (Author)

Full URL: https://doi.org/10.3390/nu11071567

2024-00284

Breastfeeding Status and Duration and Infections, Hospitalizations for Infections, and Antibiotic Use in the First Two Years of Life in the ELFE Cohort. Davisse-Paturet C, Adel-Patient K, Divaret-Chauveau A, et al (2019), Nutrients vol 11, no 7, July 2019, p 1607

In low- and middle-income countries, the protective effect of breastfeeding against infections is well established, but in high-income countries, the effect could be weakened by higher hygienic conditions. We aimed to examine the association between breastfeeding and infections in the first 2 years of life, in a high-income country with relatively short breastfeeding duration. Among 10,349 young children from the nationwide Etude Longitudinale Française depuis l'Enfance (ELFE) birth cohort, breastfeeding and parent-reported hospitalizations, bronchiolitis and otitis events, and antibiotic use were prospectively collected up to 2 years. Never-breastfed infants were used as reference group. Any breastfeeding for <3 months was associated with higher risks of hospitalizations from gastrointestinal infections or fever. Predominant breastfeeding for <1 month was associated with higher risk of a single hospital admission while predominant breastfeeding for ≥3 months was associated with a lower risk of long duration (≥4 nights) of hospitalization. Ever breastfeeding was associated with lower risk of antibiotic use. This study confirmed the well-known associations between breastfeeding and hospitalizations but also highlighted a strong inverse association between breastfeeding and antibiotic use. Although we cannot infer causality from this observational study, this finding is worth highlighting in a context of rising concern regarding antibiotic resistance. (Author)

Full URL: https://doi.org/10.3390/nu11071607

2023-12828

Baby-friendly hospitals in Turkey: evaluation of adherence to the Ten Steps to Successful Breastfeeding. Çaylan N, Kiliç M, Yalçin S, et al (2022), Eastern Mediterranean Health Journal vol 28, no 5, May 2022, pp 345–351

Background: The Baby-Friendly Hospital Initiative (BFHI) is a World Health Organization and United Nations Children's Fund joint global programme to protect, promote and support breastfeeding. Sustainability of the BFHI standards is important for health facilities and country-level implementation.

Aims: To analyse the 2018–2019 external reassessment results of baby-friendly hospitals (BFHs) in Turkey.

Methods: We included 414 BFHs. The Ten Steps to Successful Breastfeeding were divided into 2 groups: critical management procedures (Steps 1 and 2) and key clinical practices (Steps 3–10).

Results: All 10 steps were fulfilled by 60.1% of the hospitals. Steps 3 and 2 had the lowest compliance rates (81.6% and 85.7%), and Steps 7 and 8 had the highest rates (97.1% and 98.1%). Caesarean section rates in the fourth quartile were associated with significantly lower adherence to Steps 3 and 10. The presence of another external reassessment within 5 years was associated with a significantly higher adherence rate to Step 3, and a significantly higher full implementation rate for the clinical practices. Hospitals that fully implemented management procedures had a significantly higher fulfilment percentage for all clinical practices. The western region had higher adherence rates for all the clinical practices than other regions.

Conclusion: Reassessments seem useful for sustainability. Full compliance with Steps 1 and 2 is important for higher adherence to the clinical steps. Regional variations should be taken into account in the implementation of the programme. (Author)

Full URL: https://doi.org/10.26719/emhj.22.021

2023-12785

A qualitative study exploring the factors impacting student midwives' experience of developing their breastfeeding support skills. Tant M, Staras T (2023), MIDIRS Midwifery Digest vol 33, no 4, December 2023, pp 364-371

Objective
To explore the factors impacting student midwives as they seek to develop their breastfeeding support skills while on a midwifery degree programme in the UK.
Methods
A qualitative online survey to gather responses from final year student midwives in the UK. Participants were recruited by the dissemination of the survey link via the Lead Midwife for Education (LME) email network. Data collected were analysed using thematic analysis to elicit key themes.
Results and key findings
Sixty four responses were returned. Four key themes were identified: (1) expertise matters; (2) dissonance between the learning settings; (3) a challenging clinical environment; and (4) nothing can replace direct experience. Participants valued the theoretical underpinning from the university setting but needed greater input around how to deliver breastfeeding support practically and not feel underprepared for this area of practice. Students were positively influenced by time spent with infant feeding specialists. Students were impacted by staff shortages, resulting in their

experiencing poor breastfeeding support practices and not getting adequate opportunities to practise their skills under supervision.
Conclusion
Students were keen to talk about their experiences in university and clinical areas. The degree to which they felt supported to develop their skills was variable and it is clear that more can be done to improve the student midwife experience in this area. Recommendations have been made, including more simulation in the university setting, more training for hospital staff to move away from old practices such as 'hands-on' and, finally, for more midwives to be recruited to ensure better conditions for student midwives and maternity staff, and for women and their families. (Author)

2023-12541

Pattern of infants' feeding and weaning in Suez Governorate, Egypt: an exploratory study. Kamel L, Sabry H, Ismail M, et al (2020), Eastern Mediterranean Health Journal vol 26, no 8, August 2020, pp 909–915

Background: Breastfeeding and proper weaning contribute to achievement of the Sustainable Development Goals. In Egypt, by age 4–5 months, only 13% of infants are exclusively breastfed. A survey conducted in Egyptian hospitals concluded that many of the 10 steps to support successful breastfeeding were not executed correctly and other steps were not executed at all.

Aims: To explore the patterns of feeding and weaning among infants in Egypt, and identify their determinants, to improve practice and promote children's nutritional status.

Methods: A cross-sectional analytical study of 333 mother–infant pairs attending two primary healthcare (PHC) centres for vaccination sessions between April 2017 and June 2018. Mothers were interviewed using a structured questionnaire.

Results: Almost all infants were born in hospitals. Exclusive breastfeeding was not widely practiced. Prelacteal feeding was a common malpractice. The majority of mothers initiated artificial feeding during the first month of life. Rural mothers tended to introduce different foods earlier than urban mothers did. Minimum dietary diversity was achieved by 50.9% of urban infants aged ≥ 6 months (≥ 4 food groups), compared with 25.9% of rural infants. Minimum recommended meal frequency for age was fulfilled for 51.9% of urban and 29.6% of rural infants. More than 85% of mothers expressed their need for additional knowledge, and more than half identified the PHC centre as the appropriate source for information.

Conclusions: Our study reflects deficiency in maternal practice regarding breastfeeding and weaning, despite being regular visitors to the PHC centre. (Author)

Full URL: https://doi.org/10.26719/emhj.20.045

2023-11886

Applying Legitimation Code Theory to teach breastfeeding in nurse education: A case study. Bowdler S, Nielsen W, Meedya S, et al (2023), Nurse Education in Practice vol 72, October 2023, 103780

Aim
To use Legitimation Code Theory as a framework to inform the design of nursing education and gain insights into student perspectives of this design.

Background
Internationally, the World Health Organization's breastfeeding recommendations are not being met. One contributing factor is that healthcare providers including registered nurses lack the knowledge to support breastfeeding women on an ongoing basis and rely on their personal experiences to inform the care they provide. Undergraduate nursing students should receive education to assist breastfeeding women in practice.

Design
The study is underpinned by case-study methodology. The Legitimation Code Theory (LCT) dimension of Semantics and the concepts of semantic gravity and semantic density were used to theoretically frame and develop an intervention module to teach undergraduate nurses about breastfeeding.

Methods

This module was part of an elective seven-week paediatric nursing course. University Human Research Ethics Committee (HREC201/203) reviewed the study. Participants (n = 9) completed semi-structured interviews and thematic analysis helped us to understand their experiences of the module. The Template for Intervention and Description and Replication (TIDeR) framework was used to report the intervention.

Results
The breastfeeding module was positively received by participants who noted the module's structure differed from previous courses. Three main themes were identified in the student experience. These are: a) threads and links; b) engaging structure; and c) seedlings.

Conclusion
Legitimation Code Theory is an effective course development framework to harness the learners' prior informal knowledge and weave learning activities between theory and contextual practice to develop cumulative knowledge.

Impact
With an increased understanding of how undergraduate nursing students develop knowledge, the LCT dimension of Semantics can be ussed to structure content knowledge in instructional design. This approach builds explicit bridges between knowledge development in the nursing curriculum and learners' informal knowledge and contextual practice in clinical settings. (Author)

Full URL: https://doi.org/10.1016/j.nepr.2023.103780

2023-11884

Breastfeeding knowledge & attitudes: Comparison among post-licensure undergraduate and graduate nursing students.

Khasawneh WF, Moughrabi S, Mahmoud S, et al (2023), Nurse Education in Practice vol 72, October 2023, 103758

Research aims
The aims of this study are to compare the knowledge and attitude scores between undergraduate and graduate nursing students and to identify the variables associated with higher breastfeeding knowledge and attitudes.

Background
Nurses' knowledge and attitudes towards breastfeeding greatly impact their roles in promoting and supporting breastfeeding. However, they may not have sufficient knowledge and/or positive attitudes to support and advocate for these families. Many studies focused on professional nurses or undergraduate students' knowledge, attitudes, and beliefs. Few studies included registered nurses enrolled in post licensure undergraduate and graduate nursing programs.

Design
A cross-sectional, prospective, and descriptive study.

Methods
A convenient sample of 95 nursing students (50 undergraduate and 45 graduate) was recruited from an ethnically diverse, urban university in Southern California. Students voluntarily completed an online survey adapted from Brodribb, et al. (2008). Bivariate analysis was conducted to identify relationships between study variables.

Results
Compared to undergraduates, graduate students scored higher on knowledge and attitudes towards breastfeeding ($p < 0.001$). Students' perception of their prior academic breastfeeding preparation was not related to their current knowledge and attitudes. Age, having children, exclusively breastfed own baby, and duration of personal breastfeeding were positively associated with attitudes and knowledge ($p < 0.05$ for all variables). Years of nursing experience ($p = .01$) was positively associated with attitudes only.

Conclusions
Compared to academic preparation, age, having children, and personal breastfeeding experiences seem to be better indicators of breastfeeding knowledge and attitudes. Nursing programs should exert more effort in enhancing curricular evidence based breastfeeding education. More research is needed to support these efforts. (Author)

Full URL: https://doi.org/10.1016/j.nepr.2023.103758

2023-11306

Physician personal breastfeeding experience and clinical care of the breastfeeding dyad. Hoyt-Austin AE, Phillipi CA, Lloyd-McLennan AM, et al (2024), Birth vol 51, no 1, March 2024, pp 112-120

Background
Prior research suggests that physicians' personal experience with breastfeeding may influence their attitudes toward breastfeeding. This phenomenon has not been explored in well-newborn care physician leaders, whose administrative responsibilities often include drafting and approval of hospital breastfeeding and formula supplementation policies.

Methods
We conducted a mixed-methods study, surveying physicians in the Better Outcomes through Research for Newborns (BORN) network. We examined physician attitudes toward recommending breastfeeding and their breastfeeding experience. Qualitative analysis was conducted on responses to the question: “How do you think your breastfeeding experience influences your clinical practice?”

Results
Of 71 participants, most (92%) had a very positive attitude toward breastfeeding with 75% of respondents reporting personal experience with breastfeeding. Of these, 68% had a very positive experience, 25% had a somewhat positive experience, and 6% had a neutral experience. Four themes emerged with respect to the effect of breastfeeding experience on practice: (1) empathy with breastfeeding struggles, (2) increased knowledge and skills, (3) passion for breastfeeding benefits, and (4) application of personal experience in lieu of evidence-based medicine, particularly among those who struggled with breastfeeding.

Conclusions
Well-newborn care physician leaders reported positive attitudes about breastfeeding, increased support toward breastfeeding persons, and a perception of improved clinical lactation skills. Those who struggled with breastfeeding reported increased comfort with recommending formula supplementation to their own patients. Medical education about evidence-based breastfeeding support practices and provision of lactation support to physicians has the potential to affect public health through improved care for the patients they serve. (Author)

2023-07647

Human Milk Oligosaccharides Mediate the Crosstalk Between Intestinal Epithelial Caco-2 Cells and Lactobacillus PlantarumWCFS1in an In Vitro Model with Intestinal Peristaltic Shear Force. Kong C, Cheng L, Krenning G, et al (2020), The Journal of Nutrition vol 150, no 8, August 2020, pp 2077–2088

Background
The intestinal epithelial cells, food molecules, and gut microbiota are continuously exposed to intestinal peristaltic shear force. Shear force may impact the crosstalk of human milk oligosaccharides (hMOs) with commensal bacteria and intestinal epithelial cells.

Objectives
We investigated how hMOs combined with intestinal peristaltic shear force impact intestinal epithelial cells and crosstalk with a commensal bacterium.

Methods
We applied the Ibidi system to mimic intestinal peristaltic shear force. Caco-2 cells were exposed to a shear force (5 dynes/cm2) for 3 d, and then stimulated with the hMOs, 2′-fucosyllactose (2′-FL), 3-FL, and lacto-N-triose II (LNT2). In separate experiments, Lactobacillus plantarumWCFS1 adhesion to Caco-2 cells was studied with the same hMOs and shear force. Effects were tested on gene expression of glycocalyx-related molecules (glypican 1 [GPC1], hyaluronan synthase 1 [HAS1], HAS2, HAS3, exostosin glycosyltransferase 1 [EXT1], EXT2), defensin β-1 (DEFB1), and tight junction (tight junction protein 1 [TJP1], claudin 3 [CLDN3]) in Caco-2 cells. Protein expression of tight junctions was also quantified.

Results
Shear force dramatically decreased gene expression of the main enzymes for making glycosaminoglycan side chains (HAS3 by 43.3% and EXT1 by 68.7%) (P <0.01), but did not affect GPC1 which is the gene responsible for the synthesis of glypican 1 which is a major protein backbone of glycocalyx. Expression of DEFB1, TJP1, and CLDN3 genes was

decreased 60.0–94.9% by shear force (P <0.001). The presence of L. plantarumWCFS1 increased GPC1, HAS2, HAS3, and ZO-1 expression by 1.78- to 3.34-fold (P <0.05). Under shear force, all hMOs significantly stimulated DEFB1 and ZO-1, whereas only 3-FL and LNT2 enhanced L. plantarumWCFS1 adhesion by 1.85- to 1.90-fold (P <0.01).

Conclusions
3-FL and LNT2 support the crosstalk between the commensal bacterium L. plantarumWCFS1 and Caco-2 intestinal epithelial cells, and shear force can increase the modulating effects of hMOs. (Author)

Full URL: https://doi.org/10.1093/jn/nxaa162

2023-07629

A Systematic Review of Collection and Analysis of Human Milk for Macronutrient Composition. Leghi GE, Middleton PF, Netting MJ, et al (2020), The Journal of Nutrition vol 150, no 6, June 2020, pp 1652–1670

Background
As human milk (HM) composition varies by time and across even a single feed, methods of sample collection can significantly affect the results of compositional analyses and complicate comparisons between studies.

Objective
The aim was to compare the results obtained for HM macronutrient composition between studies utilizing different sampling methodologies. The results will be used as a basis to identify the most reliable HM sampling approach.

Methods
EMBASE, MEDLINE/PubMed, Cochrane Library, Scopus, Web of Science, and ProQuest databases were searched for relevant articles. Observational and interventional studies were included, and at least 2 authors screened studies and undertook data extraction. Quality assessment was conducted using the Newcastle-Ottawa scale and previously published pragmatic score.

Results
A total of 5301 publications were identified from our search, of which 101 studies were included (n = 5049 breastfeeding women). Methods used for HM collection were divided into 3 categories: collection of milk from all feeds over 24 h (32 studies, n = 1309 participants), collection at one time point (62 studies, n = 3432 participants), and “other methods” (7 studies, n = 308 participants). Fat and protein concentrations varied between collection methods within lactation stage, but there were no obvious differences in lactose concentrations. There was substantial variability between studies in other factors potentially impacting HM composition, including stage of lactation, gestational age, and analytical method, which complicated direct comparison of methods.

Conclusions
This review describes the first systematic evaluation of sampling methodologies used in studies reporting HM composition and highlights the wide range of collection methods applied in the field. This information provides an important basis for developing recommendations for best practices for HM collection for compositional analysis, which will ultimately allow combination of information from different studies and thus strengthen the body of evidence relating to contemporary HM composition. (Author)

Full URL: https://doi.org/10.1093/jn/nxaa059

2023-07548

Infant Formula Consumption Is Positively Correlated with Wealth, Within and Between Countries: A Multi-Country Study. Neves PAR, Gatica-Domínguez G, Rollins NC, et al (2021), The Journal of Nutrition vol 150, no 4, April 2020, pp 910–917

Background
In contrast with the ample literature on within- and between-country inequalities in breastfeeding practices, there are no multi-country analyses of socioeconomic disparities in breastmilk substitute (BMS) consumption in low- and middle-income countries (LMICs).

Objective
This study aimed to investigate between- and within-country socioeconomic inequalities in breastfeeding and BMS consumption in LMICs.

Methods

We examined data from the Demographic Health Surveys and Multiple Indicator Cluster Surveys conducted in 90 LMICs since 2010 to calculate Pearson correlation coefficients between infant feeding indicators and per capita gross domestic product (GDP). Within-country inequalities in exclusive breastfeeding, intake of formula or other types of nonhuman milk (cow/goat) were studied for infants aged 0–5 mo, and for continued breastfeeding at ages 12–15 mo through graphical presentation of coverage wealth quintiles.

Results
Between-country analyses showed that log GDP was inversely correlated with exclusive ($r = -0.37$, $P < 0.001$) and continued breastfeeding ($r = -0.74$, $P < 0.0001$), and was positively correlated with formula intake ($r = 0.70$, $P < 0.0001$). Continued breastfeeding was inversely correlated with formula ($r = -0.79$, $P < 0.0001$), and was less strongly correlated with the intake of other types of nonhuman milk ($r = -0.40$, $P < 0.001$). Within-country analyses showed that 69 out of 89 did not have significant disparities in exclusive breastfeeding. Continued breastfeeding was significantly higher in children belonging to the poorest 20% of households compared with the wealthiest 20% in 40 countries (by ~30 percentage points on average), whereas formula feeding was more common in the wealthiest group in 59 countries.

Conclusions
BMS intake is positively associated with GDP and negatively associated with continued breastfeeding in LMICs. In most countries, BMS intake is positively associated with family wealth, and will likely become more widespread as countries develop. Urgent action is needed to protect, promote, and support breastfeeding in all income groups and to reduce the intake of BMS, in light of the hazards associated with their use. (Author)

Full URL: https://doi.org/10.1093/jn/nxz327

2023-07547

Delayed Lactogenesis Is Associated with Suboptimal Breastfeeding Practices: A Prospective Cohort Study. Huang L, Xu S, Chen X, et al (2020), The Journal of Nutrition vol 150, no 4, April 2020, pp 894–900

Background
Breastfeeding has many established health benefits to both babies and mothers. There is limited evidence on the association between delayed lactogenesis and breastfeeding practices.

Objective
We assessed the association between delayed lactogenesis and breastfeeding practices in women initiating breastfeeding.

Design
We used data from a prospective cohort study in Wuhan, China, which enrolled pregnant women at 8–16 weeks of gestation and followed up to postpartum. Women were included who had a singleton live birth, initiated breastfeeding, and provided information on infant feeding. Maternal lactogenesis status was assessed by face-to-face interview at day 4 postpartum. Breastfeeding practices (full breastfeeding and/or any breastfeeding) were queried by telephone interview at 3, 6, and 12 mo postpartum. Poisson regression and Cox regression were used to identify the association between delayed lactogenesis and breastfeeding practices.

Results
Delayed lactogenesis was reported by 17.9% of the 2877 participants. After adjusting for potential confounders, when compared with timely lactogenesis, delayed lactogenesis was significantly associated with higher risk of inability to sustain full breastfeeding at 3 mo postpartum (RR: 1.24, 95% CI: 1.10, 1.39) and 6 mo postpartum (RR: 1.14, 95% CI: 1.04, 1.24). Delayed lactogenesis was also significantly associated with early termination of any breastfeeding (HR: 1.15, 95% CI: 1.01, 1.30) in the adjusted model. In a combined analysis, women with higher gestational weight gain (GWG, ≥16 kg for underweight and normal weight, 15 kg for overweight/obesity) and who subsequently experienced delayed lactogenesis had the highest risk of ending any breastfeeding earlier (adjusted HR: 1.32, 95% CI: 1.11, 1.55) compared with those who gained less GWG and experienced timely lactogenesis.

Conclusions
This study shows that delayed lactogenesis was associated with low rate of full breastfeeding and shorter duration of any breastfeeding. Greater efforts to promote breastfeeding should be targeted towards women with delayed lactogenesis. (Author)

Full URL: https://doi.org/10.1093/jn/nxz311

2023-07055

European Association of Breastfeeding Medicine Regional Conference 2023. Academy of Breastfeeding Medicine, European Association of Breastfeeding Medicine (2023), 2023

The 8th Academy of Breastfeeding Medicine and European Association of Breastfeeding Medicine was held at the Hotel Radisson Blu Resort and Spa, Split, Croatia from 11-13 May 2023. (JSM)

Full URL: https://abm-europe.org/

2023-06491

Working Within the International Code of Marketing of Breastmilk Substitutes: A Guide for Health Workers. UNICEF UK Baby Friendly Initiative, Ashmore S (2019), London: UNICEF UK Baby Friendly Initiative London, February 2019, online

The International Code of Marketing of Breast-milk Substitutes is an integral tool to help realise babies' rights in relation to two general principles: enabling families to make infant feeding choices free from commercial influence, with full understanding of what is in their child's best interest, and giving babies the best possible chance to grow, develop and flourish in their critical foundation years. Unfortunately, the circumstances that necessitated the creation of the Code are still relevant and constantly evolving. This guide will help health professionals to use the Code in their daily practice and has been updated to take the current commercial environment and latest information into account. (Author)

Full URL: https://www.unicef.org.uk/babyfriendly/wp-content/uploads/sites/2/2020/02/Health-Professionals-Guide-to-the-Code.pdf

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2023-06316

Climate-smart infant feeding part 3: Advocacy for Climate-smart infant feeding. Smith E (2022), Health Care Without Harm Europe Brussels, Belgium, 16 May 2022, online

Climate-smart infant feeding part 3: Advocacy for Climate-smart infant feeding is the final part of a three-part resource aimed at healthcare professionals, concerning the impact of climate change on infant nutrition.

Part 1 and 2 of the series, Climate-smart infant feeding, introduced the connections between environment, climate change, and infant nutrition, additionally some ways to practically promote climate-smart infant feeding within the healthcare institution. This resource, part 3, concerns provides some examples of how nurses can advocate wider systemic changes.

Healthcare professionals are trusted sources of information for families and for communities and society generally. By advocating changes that support sustainable and healthy nutrition, nurses and midwives can contribute to meaningful societal and political change. Nurses, through advocacy, can help to build breastfeeding-friendly communities and services that can protect both public health and the health of our planet. As a wide range of historical, cultural, and socio-economic factors affect the choice to initiate and continue breastfeeding, advocacy should be aimed at those with the power to make changes. Breastfeeding must be visible, valued, and supported through fully resourced services to positively impact sustainability and climate health- highlighting what governments and organisations can do to become breastfeeding friendly and better support families in initiating and sustaining breastfeeding, will be important in creating change. Whilst more people need to be educated about the relationship between breastfeeding, sustainability, and climate change, it is essential to emphasise that this is not about making individual families feel responsible for their feeding choices - everyone has a role to play in supporting climate-smart nutrition, from governments and large organisations to local communities. (Author, edited)

Full URL: https://www.qnis.org.uk/wp-content/uploads/2022/07/2022-05-16-NCCEurope-climate-smart-infantfeeding-part3.pdf

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2023-06308

Climate-smart infant feeding part 2: What individual nurses can do to support climate-smart infant feeding. Smith E, Fuhrmann A, Nurses Climate Challenge Europe (2022), Health Care Without Harm Europe Brussels, Belgium, 3 May 2022, online

Climate-smart infant feeding part 2: What individual nurses can do to support climate-smart infant feeding, is part of a three-part resource aimed at healthcare professionals, concerning the impact of climate change on infant nutrition. This resource, part 2, concerns what individual nurses can do to support climate-smart infant feeding, additionally, it may be useful for others involved in supporting new families.

Nurses and midwives can support parents in choosing the best options for their family and where possible, this can include how best to protect their child from environmental harm. The informed advice and support of a nurse or midwife is greatly beneficial to mothers and their infants. Whilst some barriers to breastfeeding can only be addressed with advocacy for systemic change, the Climate-smart infant feeding series advocates for climate-smart infant feeding, promoting learning about how breastfeeding-friendly communities can be built and providing information on how services, which protect both public health and our environment, can be created and sustained.

This resource contains practical ideas on how to support climate resilient infant nutrition and how to reduce the environmental impact of infant feeding within the daily work as a healthcare professional. (EA)

Full URL: https://www.qnis.org.uk/wp-content/uploads/2022/07/2022-05-03-NCCEurope-climate-smart-infantfeeding-part2.pdf

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2023-06293

Climate-smart infant feeding part 1: The interconnection of environment, climate change, and infant nutrition. Smith E, Lewis R, Thomas E, et al (2022), Health Care Without Harm Europe Brussels, Belgium, 3 May 2022, online

This is a three-part resource aimed at healthcare professionals, concerning the impact of climate change on infant nutrition. Breastfeeding remains the most environmentally sustainable method of feeding and a method that removes the need for farming, use of freshwater, power, plastic, storage, and transport. In times of emergency, it can be lifesaving and protects babies and older children from infection. Thinking about climate action, breastfeeding could be an important part of the solution, but it needs to be supported at both policy and practice levels. Clearly, there are some medical reasons why some mothers are not able to breastfeed/where the neonate is not able to be breastfed, however, this decision is also influenced by culture, habits, information from media and from advertising. One of the most trusted sources of information is the midwife or nurse who supports the new parent(s) in caring for their baby. An awareness of the pros and cons of all the different feeding methods, including their impact on climate change and the environment, can help professionals to help families make a fully informed decision. (EA)

Full URL: https://www.qnis.org.uk/wp-content/uploads/2022/07/2022-05-03-NCCEurope-climate-smart-infantfeeding-part1.pdf

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2023-05192

Exploring the Impact of Offering an Undergraduate Lactation Elective Course as a Strategy for Normalizing Breastfeeding. Efrat M (2021), Clinical Lactation vol 12, no 3, 2021

Background
More breastfeeding interventions targeting female and male undergraduates before they become parents are needed to foster accurate breastfeeding knowledge, positive attitudes toward breastfeeding, and a greater intent to breastfeed. This study aimed to assess the impact of completing a lactation elective course on undergraduates' breastfeeding knowledge, attitudes, and intention.

Methods
Pre- and postcourse surveys were administered to 96 undergraduates from various majors enrolled in a lactation elective.

Results
From pre- to postcourse, this study found significant increases in undergraduates' breastfeeding knowledge, attitudes, and intent.

Conclusions
Because most undergraduates in the United States become parents only after graduation, universities have an opportunity to foster the knowledge and attitudes needed to breastfeed successfully. As breastfeeding knowledge and attitudes in men and women are strong predictors of breastfeeding intent, initiation, and duration, offering undergraduate lactation elective courses is a promising strategy to improve future parents' breastfeeding knowledge, attitudes, and intention, helping to normalize breastfeeding and improve breastfeeding rates. (Author)

2023-03571

Perspectives From a Career in Breastfeeding Research, Mentorship, and Advocacy: An Interview With Karen Wambach. Wambach K, Chetwynd E (2023), vol 39, no 2, May 2023, pp 196–201

Karen Wambach recently retired from a distinguished career in nursing education and breastfeeding research in the United States, practicing her craft during the formative years of the field of lactation consulting. Her research focused on the description of biopsychosocial influences on breastfeeding initiation and duration, as well as interventions for promoting and supporting breastfeeding among vulnerable childbearing populations, for example, adolescent mothers. Her research career trajectory mirrors the development of breastfeeding research more broadly. She began with descriptive studies and theory testing, which included the development of the Breastfeeding Experience Scale quantifying early breastfeeding problems. She then moved on to randomized clinical trials of breastfeeding education/support for adolescent mothers, and finished her funded research using a multi-behavioral,

technology-based education and support intervention to promote breastfeeding, healthy lifestyle, and depression prevention in adolescent mothers. As researcher and educator in a clinical science area, she has supported evidence-based practice and translational science through her work as lead editor of many editions of the textbook Breastfeeding and Human Lactation. She is a consummate teacher, having mentored many upcoming researchers during her teaching career, and directed the undergraduate nursing honors program and PhD program at the University of Kansas School of Nursing in the United States. She also believes in serving her profession and has been an active member of American Academy of Nursing, the Midwest Nursing Research Society, the Association of Women's Health, Obstetric, and the Neonatal Nursing and the International Lactation Consultant Association, including serving on JHL's Editorial Review Board for many years. (This conversation was recorded on October 14, 2022 then transcribed and edited for readability. EC = Ellen Chetwynd; KW = Karen Wambach) (Author)

Full URL: https://doi.org/10.1177/08903344231156599

2023-01712

Health facility users' knowledge, perceptions, and practices about infant feeding in the context of option B+ in South Africa: a qualitative study. Nsibande DF, Magasana V, Zembe W, et al (2022), International Breastfeeding Journal vol 17, no 89, December 2022

Background
HIV and sub-optimal infant feeding practices remain important threats to child growth, development, and survival in low- and middle-income countries. To our knowledge, few studies have explored health service users' perspective of infant feeding in the context of WHO Option B+ policy to prevent vertical HIV transmission (PMTCT). This paper is a sub-analysis of qualitative data from a mixed-methods multi-level process evaluation of Option B+ implementation in South Africa (SA). In this study we explored health facility users' infant feeding knowledge, perceptions, and practices one year after SA adopted the 2016 updated World Health Organization prevention of mother-to-child transmission of HIV Option B+ infant feeding guidelines.

Methods
Nineteen focus group discussions (FGDs) were held with six groups of men and women whose infants were aged < 6 months. Participants were attending randomly selected primary health care facilities within six purposively selected priority districts. The six groups included in the FGDs were: (i) adolescent girls and young women living with HIV (WHIV), (ii) adolescent girls and young women not living with HIV (WNHIV), (iii) older postnatal WHIV (iv) older postnatal WNHIV (v) pregnant women, and (vi) men. Data collection took place between April and December 2018. Data analysis involved coding and thematic framework analysis.

Results
Women and men have suboptimal knowledge of the recommended breastfeeding duration and exclusive breastfeeding, especially for HIV-exposed infants. Most women received sub-optimal infant feeding counselling and mixed messages from health care workers. Fewer WHIV initiated breastfeeding at birth compared to WNHIV. Most parents believed that HIV-exposed infants should be breastfed for 6 months and many postnatal women on antiretroviral drugs and younger mothers lacked confidence to breastfeed beyond 6 months. Mixed feeding was predominant among all women due to individual, family, and socio-structural barriers. Many men were supportive on infant feeding; however, they lacked the appropriate information and skills to influence their partners' infant feeding decisions.

Conclusions
Differences in breastfeeding practices between WHIV and WNHIV are highly influenced by the lack of knowledge of infant feeding policy recommendations. Multiple-level factors deter many mothers from adhering to recommended guidelines. Appropriate ongoing infant feeding counselling and breastfeeding support are required for women and their partners. (Author)

Full URL: https://doi.org/10.1186/s13006-022-00526-0

2023-01589

Assessing Utilization, Benefits, and Shortfalls of Lactation Resources for Physician Trainees and Other Healthcare Providers. Apple R, Marincola Smith P, Craft P, et al (2021), Clinical Lactation vol 12, no 2, 2021

Objective
There is a need to support healthcare providers, including physician-mothers at all training levels, related to breastfeeding and expressing breast milk. This study was designed to understand the attitudes and preferences of

lactating employees regarding current lactation resources at an academic medical center.

Methods
Cross-sectional survey. Respondents reported their satisfaction with current lactation resources on scale of 0 [complete dissatisfaction] to 100 [complete satisfaction]. Respondents were asked to identify greatest priorities for improvements to existing lactation spaces.

Results
304 (34.2%) respondents, of whom 69.3% anticipated using a lactation room in the next 5 years. Satisfaction with the current status of lactation rooms was low (mean score 37.8; SD 25.3). Accessible and proximal lactation spaces were highest priorities. More than 50% of respondents indicated daily use of a “nontraditional” lactation space.

Conclusion
This study demonstrates the current state of healthcare providers' lactation-related experiences and highlights priorities for improvement, particularly provision of adequate lactation spaces. (Author)

2023-01423

Culture and breastfeeding support. Gutierrez VB (2022), British Journal of Midwifery vol 30, no 12, December 2022, pp 713–715

Veronica Blanco Gutierrez discusses the importance of cultural competence for healthcare professionals and how culture can influence breastfeeding perceptions and choices. (Author)

2023-00883

How midwives and nurses experience implementing ten steps to successful breastfeeding: a qualitative case study in an Indonesian maternity care facility. Pramono A, Smith J, Bourke S, et al (2022), International Breastfeeding Journal vol 17, no 84, December 2022

Background
The in-hospital stay following childbirth is a critical time for education and support of new mothers to establish breastfeeding. The WHO/UNICEF ‘Ten Steps to Successful Breastfeeding (Ten Steps)’ was launched globally in 1989 to encourage maternity services to educate and support mothers to breastfeed. The strategy is effective, however its uptake within health systems and facilities has been disappointing. We aimed to understand midwives’ and nurses’ experiences of implementing the Ten Steps in an Indonesian hospital.

Methods
This qualitative study was conducted in an Indonesian hospital which has been implementing the Ten Steps since the hospital’s establishment in 2012. Fourteen midwives and nurses participated in a focus group in January 2020. Data were analyzed using thematic analysis.

Results
We identified five themes that represented midwives’ and nurses’ experiences of implementing the Ten Steps in this Indonesian maternity unit: 1) Human rights of child and mother, 2) Dependency on precarious leadership, 3) Lack of budget prioritization, 4) Fragmented and inconsistent implementation of the Ten Steps across the health system, and 5) Negotiating with family, community and culture. The results highlighted a dependency on local hospital champions and a lack of budget prioritization as barriers to implementation, as well as health system gaps which prevented the enablement of mothers and families to establish and maintain breastfeeding successfully in Indonesian maternity services.

Conclusions
As Indonesia has one of the largest populations in South East Asia, it is an important market for infant milk formula, and health services are commonly targeted for marketing these products. This makes it especially important that the government invest strongly in Ten Steps implementation. Continuity of care within and across the health system and leadership continuity are key factors in reinforcing its implementation. The study findings from this Indonesian maternity care facility re-emphasize WHO recommendations to integrate the Ten Steps into national health systems and increase pre-service education on breastfeeding for health care professionals. (Author)

Full URL: https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-022-00524-2

2023-00353

Factors that influence father's experiences of childbirth and their implications upon postnatal mental health: A narrative systematic review. McNab E, Hollins CJ, Norris G (2022), Nurse Education in Practice vol 65, November 2022, 103460

Aim
To explore factors that influence fathers' experiences of childbirth and implications for their subsequent postnatal mental health.

Background
Fathers who attend the birth of their baby often have very rewarding experiences. However, those who witness a difficult birth may progress to develop subsequent mental health problems, e.g., trauma symptoms that can affect future relationships with partner and infant.

Method
A narrative systematic review of literature was carried out. Two overarching themes were identified, each with 3 underpinning sub-themes: (1) Interpersonal relationships with maternity care professionals; (1b) Communication; (1b) Feeling isolated during labour; (1c) Being prepared; (2) The aftermath; (2a) Support provision; (2b) Effects on relationships; (2c) Psychological trauma.

Conclusions
Findings emphasise that good communication between fathers and midwives is a fundamental part of providing excellent care before, during and post-childbirth, as it can reduce partners' feelings of isolation, improve their relationships and limit development and impact of psychological trauma.

Recommendations for practice
It is important to develop more on-line partner sites, parenthood education programmes and support groups, which include education about how to prevent, recognise, support and treat mental health complications. Also, further in-depth qualitative studies would enhance understanding of specific aspects of labour that traumatise fathers. (Author)

2023-00352

What knowledge of breastfeeding do nursing students hold and what are the factors influencing this knowledge: An integrative literature review. Bowdler S, Nielsen W, Moroney T, et al (2022), Nurse Education in Practice vol 64, October 2022, 103423

Aim
The aim of this review was to explore the preregistration nursing students' breastfeeding knowledge and the sources they used to develop that knowledge as a health care professional.

Background
New registered nurses do not feel prepared to support breastfeeding women in neonatal and paediatric settings.

Results
Preregistration nursing students have sufficient knowledge of the physiology of lactation but insufficient knowledge on supporting women to decide on the practical aspects of breastfeeding and its challenges for healthy or sick babies. The sources of knowledge included the students' personal experiences and the education and training that they received during their nursing course. The two themes extracted from the data that related to the sources of knowledge were: a) informal knowledge through experience and b) formal education.

Conclusions
There is a need for new ways to align the students' informal sources of breastfeeding knowledge to their formal education, focusing on supporting women to make decisions on the practical aspects of breastfeeding, including the most common challenges.

Tweetable abstract
Nursing students' knowledge of breastfeeding practice: an integrative review (Author)

2022-09883

A Description of Breast Models Used to Teach Clinical Skills. McCabe C, Ly C, Gregg B, et al (2022), Breastfeeding Medicine vol 17, no 11, November 2022, pp 875–890

Background: Health care trainees lack opportunities to practice breast assessment and clinical skills with patients, making breast models significant for hands-on training. Insufficient training leads to low competence across practitioners in breast health areas of practice, including clinical lactation. The aim of this review was to describe types of breast models used to teach clinical skills of the breast across breast health areas. The secondary aims were to describe education interventions that included each model and identify whether multiple skin tones were available in models.

Methods: Authors conducted a scoping review to identify which types of breast models are used to teach clinical skills across breast health areas of practice and determine gaps in literature regarding how clinical lactation skills are taught. The literature search was conducted in PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, MedLine, and ProQuest. Inclusion criteria were students/professionals engaging in breast model simulation. Eighteen studies were reviewed. Authors extracted data on participants, breast health area, breast model, intervention, evaluation, general outcomes, skin tone, and research design.

Results: The most common skill area was clinical breast exam (n = 7), while least was breastfeeding education (n = 1). Most models were commercial (n = 12). Zero studies described skin tone. Generally, breast model simulations were correlated with increased clinical skills and confidence regardless of model used.

Conclusions: Despite demonstrated gain of skills, this review reveals inconsistent use of breast models and evaluation, exclusion of diverse skin tones, and lack of breast models reported to teach clinical lactation skills. (Author)

Full URL: https://doi.org/10.1089/bfm.2022.0162

2022-08274

Breastfeeding mothers' experiences with community physicians in Israel: a qualitative study. Blitman E, Biderman A, Yehoshua I, et al (2022), International Breastfeeding Journal vol 17, no 62, 30 August 2022

Background

The guidelines of all leading professional organizations recommend providing adequate support and education regarding breastfeeding; yet many mothers feel that they receive inadequate information from their health care providers in the primary care setting. This is in line with studies that demonstrate that physicians' knowledge about breastfeeding is lacking. The aim of this study was to expand our understanding of the breastfeeding-related experiences of mothers with primary care physicians (PCPs).

Methods

In this qualitative study, we interviewed breastfeeding mothers in Israel in the first six months after delivery. The interviews were conducted between December 2020 and May 2021. We used thematic analysis to explore women's attitudes and experiences with their PCPs regarding breastfeeding concerns. All authors read the transcribed interviews and independently marked statements regarding breastfeeding. Then, in a joint process, codes, subthemes and themes were defined. Each subtheme was backed up with a quote from the interviews.

Results

We interviewed 13 women aged 24 to 37. We identified four main themes. The first of these was physicians' inconsistent attitudes toward breastfeeding. Some were indifferent, while others related to breastfeeding solely in the context of infant development. Some were supportive, while others opposed breastfeeding. Several women revealed physicians' inappropriate and disturbing attitudes to breastfeeding. The second theme was physicians' lack of knowledge regarding medical treatment for breastfeeding issues. This theme included lack of knowledge, incorrect treatment of breastfeeding problems, and contradictions among HCPs. The third was mothers' preference for alternative resources, including individualized breastfeeding counselling, maternity and childcare nurses, mothers' groups (in person or online), and family and friends over medical treatment for breastfeeding problems. The fourth theme involved mothers' suggestions for PCPs, which highlighted the importance of communication, prenatal physician-initiated dialogue on breastfeeding, expanding professional knowledge on breastfeeding, and increasing the availability of treatment for breastfeeding problems.

Conclusion

The women in this study reported unsatisfactory breastfeeding support by PCPs and incorrect or inadequate

treatment of medical problems related to breastfeeding. They also felt they had no medical experts to approach with breastfeeding-related problems. We believe that physicians should expand their knowledge on breastfeeding medicine so that they can provide comprehensive patient-centered treatment to both mothers and infants. Education programs for improving knowledge and skills in breastfeeding issues should be implemented throughout the medical training. (Author)

Full URL: https://doi.org/10.1186/s13006-022-00506-4

2022-02350

Educational Resources and Curriculum on Lactation for Health Undergraduate Students: A Scoping Review. Campbell SH, de Oliveira Bernardes N, Tharmaratnam T, et al (2022), Journal of Human Lactation vol 38, no 1, February 2022, pp 89-99

Background

Breastfeeding is a fundamental component of health care, and health professionals need to be adequately prepared. As part of the system, health care professionals have the ability to influence the establishment and maintenance of breastfeeding. The global literature regarding the curricular approach or established best practices for health professional education in lactation is inconclusive and lacking in rigor.

Research aim

To explore the literature for the educational resources, methods, and curriculum used in the education of undergraduate health students related to lactation.

Methods

A scoping review examining the curricular programs of health professional students in lactation was undertaken exploring and summarizing evidence from peer reviewed and grey literature. A scoping review with a five-stage review process was followed. The database search between 1982-2018 generated 625 results, 79 full-text articles were reviewed, and 29 articles published in English met the inclusion criteria.

Results

In general, educational resources, methods, curricular approaches, and foundational topics were based on best practice standards. Some authors incorporated a variety of learning methods and provided experiential learning, with evidence of translation of knowledge into clinical practice. In the studies examined, researchers reported that students had improved their: knowledge and attitudes (59%); breastfeeding support skills (45%); and confidence (10%). However, even in programs that focused on developing students' breastfeeding support skills, authors reported a lack of change in students' confidence.

Conclusions

Although only English articles met the inclusion criteria, this review was unique in its search of multidisciplinary, multilingual, and international studies. Consistency in teaching across disciplines is key and not evident in the studies reviewed. (Author)

Full URL: https://doi.org/10.1177/0890334420980693

2021-04650

How much can Mexican healthcare providers learn about breastfeeding through a semi-virtual training? A propensity score matching analysis. Vilar-Compte M, Pérez-Escamilla R, Moncada M, et al (2020), International Breastfeeding Journal vol 15, no 59, 29 June 2020

Background

Mexico has shown a worrisome decrease in breastfeeding indicators, especially in the lowest socioeconomic level. Improving breastfeeding protection, promotion, and support services through workforce development is a key area of intervention. The objective of this study is to assess the influence on breastfeeding knowledge and abilities of a semi-virtual training for primary healthcare providers assisting beneficiaries of PROSPERA in Mexico, which is one of the largest conditional cash-transfer programs in the world.

Methods

Two independent cross-sectional samples of healthcare providers were drawn at baseline and post-intervention in three states of Mexico. Baseline data were collected among primary physicians, registered nurses and nurse technicians (i.e. unit of analysis) on July 2016 (n = 529) and post-training between March and April 2017 (n = 211). A 19-item telephone questionnaire assessed providers' general knowledge about breastfeeding, breastfeeding benefits and clinical aspects of breastfeeding, clinical ability to solve problems and abilities to overcome breastfeeding challenges. The effects of the training were assessed through a propensity score matching (PSM) stratified by types of providers (i.e. physicians, registered nurses, nurse technicians).

Results
The PSM analysis showed significant improvements among all providers in the general knowledge about breastfeeding (around 20 percentage points [pp]) and knowledge about breastfeeding benefits (approximately 50 pp). In addition, physicians improved their knowledge about clinical aspects of breastfeeding (7 pp), while registered nurses improved in their ability to solve breastfeeding problems (14 pp) and in helping mothers overcome breastfeeding challenges (12 pp).

Conclusions
Promoting a breastfeeding enabling environment in Mexico to improve breastfeeding rates will require improving the knowledge and skills of healthcare providers. While a semi-virtual training showed large improvements in knowledge, developing skills among providers may require a more intensive approach. (Author)

Full URL: https://doi.org/10.1186/s13006-020-00297-6

2021-00666

Using Simulation to Teach Breastfeeding Management Skills and Improve Breastfeeding Self-Efficacy. Webber E, Wodwaski N, Courtney R (2021), The Journal of Perinatal Education Vol 31, No 1, Winter 2021, pp 19-28

Breastfeeding rates in the United States continue to be variable and are not meeting benchmarks established by Healthy People 2020. The literature indicates that although breastfeeding knowledge of providers is paramount in the success of breastfeeding mothers, most receive minimal education regarding breastfeeding management. Recognizing a lack of opportunities for nursing students to practice breastfeeding management during clinical rotations, a breastfeeding simulation program was implemented for students prior to beginning Maternal Child Health clinicals. Students reported increased confidence in caring for breastfeeding dyads and enhanced comfort when providing care to a breastfeeding mother (breastfeeding self-efficacy). This hands-on educational approach can be utilized for any provider working with breastfeeding dyads. (Author)

2021-00447

Developing the Preterm Breastfeeding Attitudes Instrument: A tool for describing attitudes to breastfeeding among health care professionals in neonatal intensive care. Gerhardsson E, Oras P, Mattsson E, et al (2021), Midwifery vol 94, March 2021, 102919

Objective
The aim of this study was to develop an instrument that measures health care professionals' (HCPs) attitudes to breastfeeding and skin-to-skin contact in relation to the Baby-Friendly Hospital Initiative for neonatal intensive care.

Design
The study was part of a larger project aiming to revive the Ten Steps to Successful Breastfeeding for both full-term and preterm infants. The study had a pre-test/post-test design using online questionnaires distributed by email before and after a training programme.

Setting and participants
A total of 70 specialist registered nurses, registered nurses, assistant nurses and physicians working at a Swedish neonatal intensive care unit answered 55 breastfeeding attitudes questions online before the training. The Preterm Breastfeeding Attitudes Instrument (PreBAI) consists of twelve of these 55 items/questions, selected using exploratory factor analysis.

Measurements and findings
Higher scores indicated more positive attitudes and the median total PreBAI score was 42 points (out of 48), on both the pre- and the post-test questionnaires, showing no significant difference. In the pre-test questionnaire, the majority of HCPs (84%) stated that they needed further breastfeeding training. They also stated that they perceived breastfeeding as very important, scoring a median of 10 (range 5-10) points on a 10-point scale. Three separate underlying dimensions were identified in the questionnaire, indicating different attitudes: Facilitating (five items), Regulating (four items), and Breastfeeding- and skin-to-skin contact-friendly (three items). A positive correlation was found between how many years the HCPs had worked in neonatal care, and their PreBAI score ($r_s = 0.383$, $p = 0.001$). Those who had previously received extra breastfeeding education scored higher on the instrument.

Key conclusions and implications for practice
Neonatal intensive care units need to increase their efforts to support breastfeeding. An important factor for mothers

when establishing breastfeeding is support from well-trained professionals with a positive attitude to breastfeeding. The PreBAI could be a useful tool for identifying attitudes among HCPs before and after attending a breastfeeding training programme.

Full URL: https://doi.org/10.1016/j.midw.2020.102919

20200827-3*

João Aprígio Guerra de Almeida: supporting breastfeeding mothers. Anon (2020), Bulletin of the World Health Organization vol 98, no 6, June 2020, pp 380-381

João Aprígio Guerra de Almeida speaks to Andréia Azevedo Soares about the origins of Brazil's human milk bank network and the psychosocial aspects of breastfeeding.

Full URL: http://dx.doi.org/10.2471/BLT.20.030620

20200813-10*

Attitudes, Perceptions, and Knowledge of Breastfeeding Among Professional Caregivers in a Community Hospital. Quinn P, Tanis SL (2020), Nursing for Women's Health vol 24, no 2, April 2020, pp 77-83

Objective

To explore the knowledge, attitudes, and perceptions of exclusive breastfeeding among professional caregivers in a suburban community hospital who typically provide, or influence, the care of parturient women.

Design

Cross-sectional quantitative study.

Setting

Acute care community hospital in suburban New Jersey with 3,500 births per year.

Participants

Obstetricians, midwives, neonatologists, pediatricians, and registered nurses.

Interventions/Measurements

We designed a survey using two instruments-the Iowa Infant Feeding Attitudes Scale and the Breastfeeding Attitudes Scale-to explore concepts of breastfeeding knowledge, attitudes, and perceptions. Data were analyzed by using descriptive and inferential statistics with SPSS (Version 19). Independent sample t tests, Pearson's correlation coefficient, and Pearson's chi-square test (×2) were used to assess differences between the groups.

Results

When the physician scores were separated out by specialty, statistically significant differences in mean scores were found (p = .002). Pediatricians had lower scores on attitude toward breastfeeding. In contrast, mean scores for perceptions and knowledge of breastfeeding were positive for physicians and nurses, regardless of area of specialization, with no statistically significant differences found.

Conclusion

Although pediatricians' attitudes, perceptions, and knowledge of breastfeeding cannot be deemed the sole cause for our organization's low rates of sustained exclusive breastfeeding in the postpartum period, this study provided an avenue for exploration that we did not immediately consider as we dissected our performance metrics related to exclusive breastfeeding. We encourage teams at other organizations to replicate and build on this work to explore influences surrounding low rates of exclusive breastfeeding. (Author)

20200622-22*

COVID-19: the importance of healthcare professionals in protecting human milk and breastfeeding. Spatz DL (2020), Infant vol 16, no 3, May 2020, pp 116-117

It is clear that the world will never be the same since the onset of the COVID-19 pandemic. Our daily routines and the healthcare system will be forever changed. Nonetheless, families will continue to conceive and bring new lives into the world. Now more than ever, families need access to evidence-based lactation care and support. With social distancing there are both opportunities and risks: opportunities to improve breastfeeding outcomes; risks that families may not be able to access much-needed lactation care or lactation technology. (Author)

20200429-20*

Impact of a Formal Lactation Curriculum for Residents on Breastfeeding Rates Among Low-Income Women. Qureshey E, Louis-Jacques AF, Abunamous Y, et al (2020), The Journal of Perinatal Education vol 29, no 2, Spring 2020

Obstetrics-gynecology residents have inadequate training in lactation management and are typically unable to

address basic breastfeeding needs. A retrospective study was performed to evaluate the impact of a formal lactation curriculum for obstetrics-gynecology residents on breastfeeding. Demographic information, medical history, and breastfeeding rates were derived from medical records and hospital lactation logs. Breastfeeding outcomes of women with term, singleton infants were analyzed before and after curriculum implementation. The study included 717 women, 337 prior to intervention and 380 after intervention. Women who delivered after curriculum implementation were more likely to breastfeed exclusively at 6 weeks postpartum (odds ratio [OR]: 2.01; 95% confidence interval [CI]: 1.28-3.15). A targeted breastfeeding curriculum was associated with increased exclusive breastfeeding rates at 6 weeks postpartum in a diverse, low-income population. (Author)

20200427-3*

Landscape Analysis of Breastfeeding-Related Physician Education in the United States. Meek JY, Nelson JM, Hanley LE, et al (2020), Breastfeeding Medicine vol 15, no 6, June 2020, pp 401-411

Background: Breastfeeding is the preferred form of infant nutrition supporting optimal health of mothers and children. Research shows that medical training is deficient in preparing physicians to develop the knowledge base, clinical management skills, and attitudes to provide optimal support for breastfeeding families. We developed this project to assess the current gaps in breastfeeding education during medical training for physicians and to inform the plan to address those gaps.
Materials and Methods: We conducted key informant interviews with nine professionals representing medical education, physician professional membership organizations, and ancillary stakeholders with an interest in improving physician education and training with respect to breastfeeding. Using those results, we developed and conducted a survey of physicians to identify training in breastfeeding received during medical school, residency/fellowship, and continuing medical education; confidence in managing breastfeeding; and attitudes about breastfeeding training. A total of 816 respondents completed the survey from the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians.
Results: Gaps exist in the training of physicians in terms of knowledge base, and clinical skills in breastfeeding support as highlighted through detailed key informant interviews and physician surveys. Physicians surveyed in the disciplines of pediatrics, obstetrics and gynecology, and family medicine indicated a desire to have more breastfeeding education integrated into their training, especially addressing clinical evaluation and management of breastfeeding problems.
Conclusion: The landscape analysis demonstrates that medical education in breastfeeding remains inadequate despite previous efforts to address the gaps and that physicians desire more training in breastfeeding, especially clinical skills training, to improve provider confidence and competence. The analysis provides the foundation for further efforts to develop a comprehensive plan to enhance physician education in breastfeeding. (Author)

20200218-20*

Long-Term Effectiveness of an e-Learning Program in Improving Health Care Professionals' Attitudes and Practices on Breastfeeding: A 1-Year Follow-Up Study. Colaceci S, Zambri F, D'Amore C, et al (2020), Breastfeeding Medicine vol 15, no 4, April 2020, pp 254-260

Introduction: In-service continuing education offers a unique opportunity to improve knowledge, skills, attitudes, and practices regarding breastfeeding. It has been shown that an online approach to in-service education is effective at improving practices and attitudes toward breastfeeding among health care professionals (HCPs) in the short term.
Aim: To evaluate the long-term effectiveness of an online national program on infant nutrition for HCPs.
Materials and Methods: We carried out a follow-up study using data from three time points: T0 (pretraining), T1 (immediately post-training), and T2 (1 year after training). The differences between T0, T1, and T2 were tested using repeated-measures ANOVA. Statistical analysis was performed using SPSS version 22.0.
Results: The final sample was comprised of 4,582 participants, mainly women (87.4%). At T2, we observed a worsening of attitudes and practices (APs) as compared with T1, though those APs almost never reached the low levels observed at T0. The greatest changes over time concerned the use of drugs during breastfeeding (T0: 3.00 ± 1.33 versus T1: 1.74 ± 1.03 versus T2: 2.64 ± 1.35) and dietary restriction (T0: 2.77 ± 1.35 versus T1: 1.76 ± 1.12 versus T2: 2.57 ± 1.35). The differences between the means of APs at T0, T1, and T2 were significant ($p < 0.01$).
Conclusion: This e-learning program was effective in improving APs regarding the protection, promotion, and support of breastfeeding. The improvement, higher immediately after training, decreased over time. E-learning project managers should propose strategies to facilitate the retention of knowledge related to the main training objectives. (Author)

20200107-2

Maternal religion and breastfeeding intention and practice in the US Project Viva cohort. Bernard JY, Rifas-Shiman SL, Cohen E, et al (2020), Birth vol 47, no 2, June 2020, pp 191-201

Background
Religion has rarely been studied as a determinant of infant feeding practices. We examined whether religious affiliation is associated with formula feeding vs breastfeeding intention and practice in women from the United States Project Viva cohort.
Methods
Between 1999 and 2002, 2128 pregnant women were recruited in the area of Boston, Massachusetts. They reported by questionnaire their religious affiliation, and their intended and practiced infant feeding mode (exclusive formula feeding vs partial vs exclusive breastfeeding) at different time points. We examined associations of religious affiliation with infant feeding intention and practice by modified Poisson regression and multinomial logistic regression adjusted for known sociodemographic confounders.
Results
Of 1637 women with complete data, 52% reported being Catholic, 29% Protestant, 11% unaffiliated, 4% Jewish, and 4% other religion. Overall, 8.5% and 15.9% women intended and initiated exclusive formula feeding, respectively. Compared with unaffiliated women, Catholics were more at risk to intend to exclusively formula-feed their infant at birth (risk ratio [95% CI]: 6.4 [1.6-26.0]) and to exclusively formula-feed after delivery (2.4 [1.3-4.2]) and 3 months postpartum (1.3 [0.98-1.8]). The odds ratio for intending and practicing partial (vs exclusive) breastfeeding did not differ by religious affiliation at most examined time points. Associations of Protestant women with infant feeding exhibited estimates closer to unaffiliated than to Catholic women.
Conclusions
Catholic women are more at risk to intend and practice exclusive formula feeding than women of other religious affiliations. Our findings may help health care practitioners adapt their breastfeeding promotion to the mother's religious affiliation. (Author)

20200107-16*

Crafting an Evidence-Based, Accreditation Council of Graduate Medical Education-Compliant Lactation Policy for Residents and Fellows. Johnson HM, Walsh DS (2020), Breastfeeding Medicine vol 15, no 1, January 2020, pp 49-55

Background: New Accreditation Council of Graduate Medical Education (ACGME) requirements mandate lactation accommodations for resident physicians and fellows. However, to date, few training programs have developed and reported robust lactation support programs or policies.
Objective: The authors aimed to develop an evidence-based, ACGME-compliant policy to optimize lactation support for residents and fellows at their institution.
Methods: Six Sigma process improvement methodology was utilized to structure this 2018-2019 project. Qualitative methods included stakeholder analysis, feedback sessions, formal needs assessments, and a thorough review of breastfeeding law, societal guidelines, and best practices. Quantitative methods included use of a standardized grading tool for lactation facilities. Quality assurance efforts are ongoing to ensure successful implementation of the developed policy.
Results: The authors present a framework for improving lactation support for residents and fellows and share an institutional policy suitable for implementation by other graduate medical education departments.
Conclusions: To ensure compliance with ACGME requirements and address breastfeeding challenges faced by medical trainees, it is crucial that U.S. residencies and fellowships implement lactation policies to support trainees. The authors welcome the modification and utilization of the evidence-based, ACGME-compliant policy reported herein. (Author)

20190924-36*

Exploring North Carolina Family and Consumer Sciences Teachers' Attitudes Towards Breastfeeding and Infant Feeding Education Practices. Singletary N, Goodell LS, Fogleman A (2020), Journal of Human Lactation vol 36, no 4, November 2020, pp 766-775

Background:The World Health Organization (WHO) and the United Kingdom Committee for UNICEF recommend that secondary schools include infant feeding education in the curriculum. However, little attention has been given to the study of educators' views and practices regarding infant feeding education.Aims:The aims of this research were to (1) explore North Carolina Family and Consumer Sciences teachers' attitudes towards infant feeding education in secondary schools and (2) describe North Carolina Family and Consumer Sciences teachers' infant feeding education practices.Methods:Researchers conducted interviews (N = 19) and a survey (N = 137) using a sequential mixed

methods design. The constant comparative method was used to analyze interview transcripts. Subsequently, a 33-item survey was developed to assess teachers' attitudes and practices, and this survey was tested for validity and reliability.Results:The majority of participants supported including infant feeding (n = 119, 86.9%) and breastfeeding (n = 116, 84.7%) education in high school. Approximately half of the participants supported including infant feeding (n = 71, 51.9%) and breastfeeding (n = 64, 46.7%) education in middle school. Participants reported that they taught infant feeding at both levels; topics taught included complementary foods, patterns of infant feeding, and the safe preparation of infant formula. Breastfeeding content was covered primarily in the high school Parenting and Child Development course.Conclusions:North Carolina Family and Consumer Sciences teachers have positive attitudes towards teaching about breastfeeding at the secondary school level. Content about infant nutrition and breastfeeding is currently included in courses that cover child development and human nutrition. (25 references) (Author)

20190703-134*

Online Education for WIC Professionals. Tedder J, Quintana EM (2018), Clinical Lactation vol 9, no 3, 2018, pp 108-116

Breastfeeding initiation is on the rise in New Mexico; however, breastfeeding duration here, and around the world, does not meet international recommendations. Misunderstanding a baby's behavior is often an overlooked variable that decreases breastfeeding duration. Hoping to help parents better understand how child development impacts breastfeeding, 138 New Mexico Women, Infants, and Children (WIC) professionals recently completed HUG Your Baby's Roadmap to Breastfeeding Success-a 2-hour online program, with accompanying resources, that covers key information from birth to 1 year. After completing the course, participants demonstrated increased knowledge of how child development impacts breastfeeding, expressed a stronger intention to teach parents about normal child behavior, and reported greater confidence to do so. The course was viewed as evidence-based, its online format was well-received, and participants would recommend it to colleagues. (Author)

20190513-27

Enablers of and barriers to the increased provision of human breast milk for preterm infants. Rivett M (2019), MIDIRS Midwifery Digest vol 29, no 2, June 2019, pp 225-230

It has been suggested that the perfect medicine for babies is human milk that only a mother can provide (Meier et al 2010), and Quigley et al (2018) assert that human milk can be lifesaving for preterm infants. Rivett (2019) previously discussed the cultural changes required to improve breastfeeding experiences for mothers of preterm infants so as to contribute to reducing infant mortality for this vulnerable group. This paper aims to explore how maternity and neonatal health services can support mothers of preterm infants who express a desire for their infant to receive human breast milk. (40 references) (Author)

20190425-68*

Breast feeding. Brock EG, Long L (2019), Obstetrics, Gynaecology and Reproductive Medicine vol 29, no 5, May 2019, pp 136-140

Breastfeeding confers multiple benefits to both infants and mothers, with evidence linking breastfeeding to a lower risk of many adverse outcomes including gastroenteritis, respiratory disease, necrotising enterocolitis and otitis media in infants, and a lower risk of breast cancer in mothers. Breastfeeding has also been linked to other health, social and cognitive outcomes including childhood obesity and cognitive development. It is the responsibility of all health professionals to support women during the breastfeeding period, and as part of the NHS Long Term Plan the recommendation that Unicef UK Baby Friendly accreditation occurs across all maternity services and includes a focus on improved support for families with infants in neonatal care. Many mothers are required to use drugs during breastfeeding. Almost all drugs transfer into breast milk and this may carry a risk to a breastfed infant. Factors such as the dose received via breast milk, and the pharmacokinetics and effect of the drug in the infant need to be taken into consideration. Problems should not be overstated however, as many drugs are considered 'safe' during breastfeeding. (12 references) (Author)

20190416-9

The effect of a breastfeeding educational workshop on clinicans' knowledge, attitudes and practices. Al-Nuaimi K, Ali R, Ali FH (2019), British Journal of Midwifery vol 27, no 4, April 2019, pp 242-250

Background

Counselling, education and support from health professionals is key to increasing breastfeeding practices.

Aim

To evaluate the effectiveness of a breastfeeding educational workshop on Jordanian nurses' and midwives'

knowledge, attitudes and practices towards breastfeeding.
Methods
A convenience sample of 82 nurses and midwives were recruited and randomly assigned into intervention and control groups. A pre-test was conducted for both groups and a post-test was conducted 2 weeks after the intervention for both groups.
Findings
The results showed significantly higher mean and standard deviation in the intervention group (M=11.73; SD=2.6), compared to the control group (M=8.38; SD=2.59) after conducting the workshop (P<0.001), indicating that the workshop was beneficial in improving knowledge and practice towards the importance of breastfeeding.
Conclusion
The 2-hour educational workshop increased health professionals' knowledge and this may lead to improvements in practice and better breastfeeding outcomes. (Author)

20190404-16*

A Pilot Study to Assess Breastfeeding Knowledge, Attitudes, and Perceptions of Individuals Who Work in Perinatal Opioid Use Disorder Treatment Settings. Short VL, Cambareri K, Gannon M, et al (2019), Breastfeeding Medicine vol 14, no 5, June 2019, pp 307-312

Background: Although current evidence suggests that there are unique benefits of breastfeeding for mothers receiving comprehensive treatment, including counseling and pharmacotherapy, for opioid use disorder (OUD) and their infants, breastfeeding rates in this population are low. Support and counseling about breastfeeding are key predictors of infant feeding behaviors. Thus, identifying knowledge and attitudes regarding breastfeeding of individuals who work in OUD treatment facilities could offer insight into targets for breastfeeding-promotion interventions in such settings.
Materials and Methods: Individuals who work at two urban perinatal OUD treatment centers were e-mailed a link to complete a questionnaire electronically. Breastfeeding knowledge, attitudes, and perceptions of those who completed the questionnaire were described using descriptive statistics.
Results: Among the 24 survey respondents, most correctly identified the health benefits of breastfeeding for infants with neonatal abstinence syndrome, whereas less than half correctly identified the health benefits of breastfeeding for all infants. Only 16% reported receiving work-related breastfeeding education. The leading perceived breastfeeding challenges for women in treatment for OUD were (1) concern with transfer of medication (e.g., methadone) through breast milk, (2) daily commutes for treatment, and (3) beliefs that formula is better than breastfeeding.
Conclusions: Professionals who work in perinatal OUD treatment centers could benefit from education regarding breastfeeding in mothers in treatment for OUD.
(Author)

20190207-10

Fifteen-minute consultation: Breastfeeding in the first 2 weeks of life-a hospital perspective. Levene I, O'Brien F (2019), Archives of Disease in Childhood: Education & Practice Edition vol 104, no 1, February 2019, pp 20-26

The beneficial health and economic impacts of breastfeeding are considerable. However the majority of babies in the UK are not exclusively breastfeeding by 6 weeks of age. The first few weeks of life are therefore a critical period to facilitate breastfeeding. Health professionals must have a thorough knowledge of normal breastfeeding patterns in order to minimise unnecessary interference, and an understanding of how to protect the breastfeeding relationship when medical problems occur. (27 references) (Author)

20190110-87*

The IBLCE exam: candidate experience, motivation, study strategies used and predictors of success. Zakarija-Grkovic I, Pavicic Bosnjak A, Buljan I, et al (2019), International Breastfeeding Journal vol 14, no 2, 7 January 2019

Background
Optimising breastfeeding rates is a public health priority. Studies have shown that all forms of extra breastfeeding support increase breastfeeding rates, including support provided by trained health professionals. International Board Certified Lactation Consultants (IBCLCs) are trained healthcare professionals in the clinical management of breastfeeding and human lactation. The IBCLC certification is a sought-after credential and can only be obtained after passing the exam administered by the International Board of Lactation Consultant Examiners (IBLCE). In Slovenia and Croatia, the IBLCE exam has been offered since 2006 and 2009, respectively. In this study, our aim was to 1) determine

which candidate characteristics are associated with a passing grade on the IBLCE exam; and 2) analyse differences between candidates from Slovenia and Croatia, given Slovenians' higher achievements in the past.
Methods
In February, 2017, a 4-page, 36-question survey was sent via Survey Monkey to the available email addresses of all past IBLCE exam candidates in Croatia and Slovenia. Questions covered sociodemographic data, breastfeeding education, exam preparation, motivation and experience taking the IBLCE exam.
Results
Ninety-two participants completed the online survey: 36 from Croatia and 55 from Slovenia, giving a response of 47 and 52%, respectively. No significant difference was found in pass rates between the two countries, despite Slovenians being younger and spending more time observing normal breastfeeding dyads. Variables found to be significantly more common among respondents who passed the IBLCE exam included: attending breastfeeding conferences/symposiums, using a breastfeeding atlas and studying with others. Statistical predictors of IBLCE exam success were: number of hours of bedside teaching, perceived clarity of photographs and breastfeeding conference/symposium attendance. Respondents who reported that they had attended a breastfeeding conference/symposium, had less hours of bedside teaching and perceived exam photographs as completely clear, were 7.49 (95% CI 2.26, 24.84), 0.48 (95% CI 0.28, 0.82), and 3.49 (95% CI 1.17, 10.41) times more likely to pass the exam, respectively.
Conclusion
Breastfeeding conference attendance, less bedside teaching and perceived clarity of exam photographs may be predictors of IBLCE exam success. Further studies on larger samples of exam candidates are required to confirm our findings and determine other factors associated with passing the IBLCE exam.
(19 references) (Author) [Please note: this article is a digital version which may undergo minor changes in the future]

Full URL: https://doi.org/10.1186/s13006-018-0197-2

20181220-24*

Pediatric Nurses' Knowledge of and Self-Efficacy in Breastfeeding Counseling. Farrag NS, Abdelsalam SA, Laimon W, et al (2019), American Journal of Perinatology vol 36, no 11, September 2019, pp 1120-1126

Objective
Sound breastfeeding (BF) knowledge among health professionals is vital for proper institutional support of BF mothers. This study aims to measure both BF knowledge and self-efficacy (SE) of pediatric nurses in supporting BF and to determine their associated factors.
Study Design
A cross-sectional study was conducted in Mansoura University Children's Hospital and Mansoura New General Hospital during the period from January to March 2017. A total of 186 nurses completed a predesigned self-administered questionnaire developed by the investigators to measure BF knowledge and SE in BF counseling.
Results
The overall total means of BF knowledge and SE scores were 26.8 (6.4) and 3.8 (0.6), respectively. Linear regression showed that having bachelor education, working in neonatal department, having a child (aged 2-5 years) were significant independent predictors of BF knowledge score ($R2 = 0.448$, $p \leq 0.001$), while BF knowledge score is the only significant independent predictor of SE in BF counseling ($R 2= 0.36$, $p \leq 0.001$).
Conclusion
Higher pregraduation education, working in neonatal department, having children aged 2 to 5 years are independent predictors of BF knowledge. Improving BF knowledge may improve nurses' SE in supporting BF.
(33 references) (Author)

20181218-37*

Impact of Training Specialty on Breastfeeding Among Resident Physicians: A National Survey. Gupta A, Meriwether K, Hewlett G (2019), Breastfeeding Medicine vol 14, no 1, February 2019, pp 46-56

Objectives: The United States has seen an increasing number of child-bearing women in medical training. We aimed to compare the prevalence of exclusive breastfeeding across varied specialties, whose trainees may face different obstacles to breastfeeding.
Materials and Methods: An online survey querying the duration and barriers to breastfeeding was sent to Accreditation Council for Graduate Medical Education (ACGME) and American Osteopathic Association (AOA) programs. Female residents with at least one living child born during residency were eligible. We compared the prevalence of exclusive breastfeeding for 6 months between Obstetrics and Gynecology (OBGYN), nonsurgical, and non-OBGYN surgical specialties. A multiple regression model correcting for ethnicity, years lived in the United States,

medical degree, year of residency at childbearing, geographical location, and clinical hours was performed.
Results: There were 708 completed surveys, including 561 nonsurgical, 73 OBGYN, and 74 non-OBGYN surgical residents. More OBGYN residents reported exclusive breastfeeding at 6 months (43/73, 59%) than nonsurgical (217/561, 39%) and non-OBGYN surgical residents (30/74, 41%) ($p < 0.01$). After adjusting for confounders, OBGYN trainees were twice as likely to breastfeed (adjusted odds ratio [AOR] = 2.18, 95% confidence interval [CI] 1.28-3.72) with no difference between non-OBGYN surgical and nonsurgical residents (AOR = 1.24, 95% CI 0.70-2.19). Less OBGYN residents reported the lack of breastfeeding facilities at work (2.7% versus 17.6%, $p < 0.01$) and inadequate leave (4.1% versus 17.6%, $p = 0.01$) than non-OBGYN surgical residents.
Conclusions: In this national survey of trainees in accredited programs, OBGYN residents were twice as likely to breastfeed and fewer OBGYN residents cited barriers to breastfeeding compared to other residents.
(Author) [Please note: this article is a digital version which may undergo minor changes in the future]

20181211-33*

Missed Opportunities in the Outpatient Pediatric Setting to Support Breastfeeding: Results From a Mixed-Methods Study.
Ramos MM, Sebastian RA, Sebesta E, et al (2019), Journal of Pediatric Health Care vol 33, no 1, January 2019, pp 64-71

Introduction
Outpatient pediatric providers play a crucial role in the promotion of breastfeeding. We conducted a mixed methods study to measure provider knowledge, attitudes, and current practices around breastfeeding counseling.
Method
In New Mexico in 2016 and 2017, we conducted a knowledge, attitudes, and practice survey of outpatient pediatric providers (i.e., nurse practitioners, physicians, and physician assistants) and conducted focus groups with outpatient pediatric providers.
Results
Seventy-seven providers responded to the survey, and 17 participated in three focus groups. Fewer than half of providers surveyed reported asking how long mothers plan to breastfeed at initial well-baby examinations. One quarter of participants (28.2%) erroneously reported that hepatitis C was an absolute contraindication to breastfeeding. Just half of respondents had received continuing education within the past 3 years about managing common breastfeeding problems.
Discussion
We identified missed opportunities for outpatient pediatric providers to support breastfeeding and a need for continuing provider education. (Author)

20181116-20*

Changes in speech-language pathology students' attitudes toward breastfeeding during a pediatric dysphagia course.
Mahurin-Smith J (2018), Journal of Human Lactation vol 34, no 4, November 2018, pp 721-727

BACKGROUND:
Speech-language pathologists provide infant feeding assessment and intervention; their training in breastfeeding management is highly variable. Research aim: The purpose of this study was to evaluate student attitudes toward breastfeeding and self-identified factors in attitude change.
METHODS:
Before and after their course in pediatric dysphagia, two cohorts of graduate students in speech-language pathology (N = 36) completed an assignment designed to capture qualitative and quantitative data on changes in
their attitudes toward breastfeeding. Students rated their reactions to two hypothetical breastfeeding scenarios before and after the class, which included multiple sources of information on the importance of human milk and
on breastfeeding management. Additionally, they completed a postclass reflection describing the nature of any changes in their attitudes toward breastfeeding and their ideas about the factors that were responsible for these changes. Nonparametric statistical tests were used to assess quantitative results; the qualitative data were evaluated via content analysis to identify themes.
RESULTS:
Significant positive changes in student attitudes were measured at the completion of the course. Students identified parents' stories as a particularly compelling component of their increased openness to breastfeeding.
CONCLUSION:
Attitudes toward breastfeeding may improve significantly over a relatively short period of time following a targeted intervention. Implications for lactation consultants and continuing education providers are discussed. (22 references) (Author)

20181029-21*

Process-oriented training in breastfeeding alters attitudes to breastfeeding in health professionals. Ekström A, Widström AM, Nissen E (2005), Scandinavian Journal of Public Health vol 33, no 6, 2005, pp 424-431

AIM:
The purpose of the study was to measure the attitudes of antenatal midwives and postnatal nurses to breastfeeding before and after common, process-oriented breastfeeding training.
METHOD:
Antenatal centres and child-health centres in 10 municipalities were randomized to either an intervention or a control group. The antenatal midwives and postnatal nurses in the intervention group were together
given process-oriented breastfeeding training and were, in addition, asked to develop a common breastfeeding policy. A previously developed instrument was used to measure the effects of a trainingprogramme on breastfeeding attitudes among midwives and postnatal nurses. It consisted of four scales measuring a person's attitudes toward breastfeeding in four dimensions: regulating, facilitating, disempowering, and breastfeeding-antipathy attitudes. A mean score was calculated for each individual on these four dimensional scales. The higher the score, the stronger the attitude.
RESULTS:
After one year, the intervention group reduced their scores on the regulating scale when compared with the control group ($p<0.001$). The intervention group decreased their scores on the regulating scale and increased their scores on the facilitating scale over the first year after training. The control group also significantly increased their scores on the facilitating scale. When the results were analysed profession-wise, the postnatal nurses in the intervention group decreased their scores on the regulating and disempowering scales and increased their scores on the facilitating scale. In contrast, the midwives in the intervention group decreased their scores only on the breastfeeding antipathy scale. The control group midwives decreased their scores on the disempowering scale. No differences were found among the postnatal nurses in the control group.
CONCLUSION:
Process-oriented breastfeeding training made both antenatal midwives and postnatal nurses better disposed to breastfeeding; postnatal nurses in particular improved their attitudes. Attitudes to breastfeeding tended to be stable over time,
but process-oriented training lowered the scores a little on the regulating scale, suggesting that after this kind
of training counsellors would find it less necessary to schedule and control the mothers' breastfeeding behaviour. (Author)

20180821-43

Maternity Nurses' Knowledge and Practice of Breastfeeding in Mississippi. Alakaam A, Lemacks J, Yadrick K, et al (2018), MCN - American Journal of Maternal/Child Nursing vol 43, no 4, July/August 2018, pp 225-230

Background: Mississippi has the lowest rates of breastfeeding of all states at 6 months and at 1 year. Registered nurses working in the maternity setting can be influential in mothers' decision to breastfeed.
Purpose: The purpose of this study was to examine registered nurses' knowledge and practice related to breastfeeding; and to identify facilitators and barriers to implementing the Ten Steps to Successful Breastfeedingin Mississippi hospitals.
Methods: 302 Registered nurses working in hospital maternity/birthing settings in Mississippi completed a questionnaire. Breastfeeding knowledge and practices overall scores were categorized into: poor and good. Chi-square analysis and Spearman correlations were used to determine correlations among the variables.
Results: Overall breastfeeding knowledge and practices of respondents was good. Only 4% earned a perfect score. Most believed they were effective (77%) in meeting the needs of new mothers. Significant positive associations were noted among knowledge and effectiveness, and other variables. Resistance to change and staffing shortages were the main barriers to implementing the Ten Steps; raising awareness about the importance of the Ten Steps and providing a lactation consultant were the main facilitators.
Conclusion: More research is needed to understand reasons behind low breastfeeding rates in Mississippi. (Author)

20180801-56*

Breastfeeding knowledge, attitudes, intentions, and perception of support from educational institutions among nursing students and students from other faculties: A descriptive cross-sectional study. Natan MB, Haikin T, Wiesel R (2018), Nurse Education Today vol 68, September 2018, pp 66-70

Background
Nursing education aims to promote positive health practices among the general population as well as among nurses

themselves. Breastfeeding is one of these important health practices. However, to date there is little evidence regarding the extent to which nursing education affects nursing students' attitudes, knowledge, intentions, and their perception of institutional support regarding breastfeeding.
Objectives
To compare breastfeeding attitudes and knowledge among nursing students and students from other faculties, as well as their perception of their academic institution's support for breastfeeding, and to explore the association between these factors and students' intention to breastfeed during the course of their studies.
Design
This study was a descriptive cross-sectional study.
Settings
The study was conducted at a large university in central Israel.
Participants
One hundred female students from the faculty of nursing and 100 female students from other faculties, of childbearing age, who were either pregnant or mothers.
Methods
The students completed a questionnaire regarding their breastfeeding knowledge, intentions, attitudes, and their perception of their academic institution's support for breastfeeding.
Results
Nursing students' level of breastfeeding knowledge was very high, and higher than that among students from other faculties. However, both groups had similar moderately positive overall scores for attitudes towards breastfeeding. In addition, both groups expressed similar moderate intentions to breastfeed during the course of their studies. Students' perception of their academic faculty as supportive of breastfeeding, their breastfeeding attitudes, and breastfeeding knowledge, were found to predict their intention to breastfeed during the course of their studies.
Conclusions
Nursing programs should place more emphasis on improving nursing students' attitudes towards breastfeeding. In order to promote breastfeeding among students during their studies, it is important to ensure a pro-breastfeeding environment on campus. (33 references) (Author)

20180608-41*

Frontline health workers and exclusive breastfeeding guidelines in an HIV endemic South African community: a qualitative exploration of policy translation. Nieuwoudt S, Manderson L (2018), International Breastfeeding Journal vol 13, no 20, 7 June 2018

Background
Mothers rely heavily on health worker advice to make infant feeding decisions. Confusing or misleading advice can lead to suboptimal feeding practices. From 2001, HIV positive mothers in South Africa were counseled to choose either exclusive breastfeeding or exclusive formula feeding to minimize vertical HIV transmission. On the basis of revised World Health Organization guidelines, the government amended this policy in 2011, by promoting exclusive breastfeeding and discontinuing the provision of free formula. We explored how health workers experienced this new policy in an HIV endemic community in 2015-16, with attention to their knowledge of the policy, counselling practices, and observations of any changes.
Methods
We interviewed eleven health workers, from four community health clinics, who had counseled mothers before and after the policy change. The transcribed interviews were analyzed thematically, using a hybrid coding approach.
Results
The scientific rationale of the policy was not explained to most health workers, who mostly thought that the discontinuation of the formula program was cost-related. The content of their counseling reflected knowledge about promoting breastfeeding for all women, and accordingly they mentioned the nutritional and developmental benefits of breastfeeding. The importance of exclusive breastfeeding for all infants was not emphasized, instead counseling focused on HIV prevention, even for uninfected mothers. The health workers noted an increased incidence of breastfeeding, but some worried that to avoid HIV disclosure, HIV positive mothers were mixed feeding rather than exclusively breastfeeding.
Conclusions
Causal links between the policy, counseling content and feeding practices were unclear. Some participants believed that breastfeeding practices were driven by finance or family pressures rather than the health information they provided. Health workers generally lacked training on the policy's evidence base, particularly the health benefits of exclusive breastfeeding for non-exposed infants. They wanted clarity on their counseling role, based on individual

risk or to promote exclusive breastfeeding as a single option. If the latter, they needed training on how to assist mothers with community-based barriers. Infant feeding messages from health workers are likely to remain confusing until their uncertainties are addressed. Their insights should inform future guideline development as key actors. (44 references) (Author) [Please note: BMC initially publish articles in a provisional format. If there is a note on the document to indicate that it is still provisional, it may undergo minor changes]

Full URL: https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-018-0164-y

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20180531-71*

Residents' breastfeeding knowledge, comfort, practices, and perceptions: results of the Breastfeeding Resident Education Study (BRESt). Esselmont E, Moreau K, Aglipay M, et al (2018), BMC Pediatrics vol 18, no 170, 22 May 2018

Background
Physicians have a significant impact on new mothers' breastfeeding practices. However, physicians' breastfeeding knowledge is suboptimal. This knowledge deficit could be the result of limited breastfeeding education in residency. This study aimed to explore pediatric residents' breastfeeding knowledge, comfort level, clinical practices, and perceptions. It also investigated the level and type of education residents receive on breastfeeding and their preferences for improving it.
Methods
Descriptive, cross-sectional, self-reported online questionnaires were sent to all residents enrolled in a Canadian general pediatric residency program, as well as to their program directors. Resident questionnaires explored breastfeeding knowledge, comfort level, clinical practices, perceptions, educational experiences and educational preferences. Program director questionnaires collected data on current breastfeeding education in Canadian centers. For the resident survey, breastfeeding knowledge was calculated as the percent of correct responses. Demographic factors independently associated with overall knowledge score were identified by multiple linear regression. Descriptive statistics were used for the program director survey.
Results
Overall, 201 pediatric residents, and 14 program directors completed our surveys. Residents' mean overall breastfeeding knowledge score was 71% (95% CI: 69-79%). Only 4% (95% CI: 2-8%) of residents were very comfortable evaluating latch, teaching parents breastfeeding positioning, and addressing parents' questions regarding breastfeeding difficulties. Over a quarter had not observed a patient breastfeed. Nearly all agreed or strongly agreed that breastfeeding promotion is part of their role. Less than half reported receiving breastfeeding education during residency and almost all wanted more interactive breastfeeding education. According to pediatric program directors, most of the breastfeeding education residents receive is didactic. Less than a quarter of program directors felt that the amount of breastfeeding education provided was adequate.
Conclusion
Pediatric residents in Canada recognize that they play an important role in supporting breastfeeding. Most residents lack the knowledge and training to manage breastfeeding difficulties but are motivated to learn more about breastfeeding. Pediatric program directors recognize the lack of breastfeeding education.
(29 references) (Author) [Please note: BMC initially publishes articles in a provisional format. If there is a note on the document to indicate that it is still provisional, it may undergo minor changes]

Full URL: https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-018-1150-7

20180524-2*

The Impact of the Professional Qualifications of the Prenatal Care Provider on Breastfeeding Duration. Wallenborn JT, Lu J, Perera RA, et al (2018), Breastfeeding Medicine vol 13, no 2, March 2018, pp 106-111

Background: A prenatal commitment to breastfeed is a strong predictor for breastfeeding success. Prenatal care providers have the opportunity to educate and promote breastfeeding. However, differences in education and training between healthcare providers such as physicians and midwives may result in differing breastfeeding outcomes. This study explores whether breastfeeding initiation and duration differ by prenatal care provider.
Materials and Methods: Longitudinal data from the Infant Feeding Practices Survey II were analyzed (N = 2,832 women). Prenatal care providers were categorized as obstetrician, family/other physician, and midwife/nurse-midwife. Breastfeeding initiation was dichotomized (yes; no). Breastfeeding duration and exclusive breastfeeding duration were reported in weeks. Logistic regression was used to investigate the relationship between prenatal care provider and breastfeeding initiation. Cox proportional hazard models provided crude and adjusted hazard ratios and 95% confidence limits to determine the relationship between type of prenatal care provider and breastfeeding duration.
Results: After adjusting for confounders, women who received care from a midwife were 68% less likely to never

breastfed than women whose prenatal care was provided by an obstetrician. Women whose prenatal care was provided by a midwife had 14% lower risk of discontinuing breastfeeding and 23% lower risk of discontinuing exclusive breastfeeding. No significant association was found between women whose prenatal care was provided by a family physician or other type of physician and breastfeeding initiation and duration.
Conclusion: Findings highlight the importance of prenatal care providers on breastfeeding duration. Future studies should examine factors (i.e., training, patient-provider interaction) that contribute to differences in breastfeeding outcomes by type of prenatal care provider. (Author)

20180515-68

Society and breastfeeding. Rizzo M (2018), Breastfeeding Matters no 225, May/June 2018, pp 6-7

The author compares attitudes to breastfeeding in this country to those held by mothers and health professionals in her home country, Sweden, where breastfeeding rates are high. She recalls the problems she faced breastfeeding her son and her disappointment at the lack of support she received. Explains how matters were resolved when a lactation consultant diagnosed her son with tongue tie and this was corrected with surgery. (JSM)

20180425-39*

Colchester mother creates bottle-feeding support group. BBC News (2018), BBC News 24 April 2018

A brief news report and video on a mother who has launched a bottle-feeding support group after being criticised for failing to breastfeed her baby. (CAP)

Full URL: http://www.bbc.co.uk/news/av/uk-england-essex-43894445/colchester-mother-creates-bottle-feeding-support-group

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20180328-40*

A randomised controlled trial of the effectiveness of a breastfeeding training DVD on improving breastfeeding knowledge and confidence among healthcare professionals in China. Ma YY, Wallace LL, Qiu LQ, et al (2018), BMC Pregnancy and Childbirth vol 18, no 80, 27 March 2018

Background
Despite almost all babies being breastfed initially, the exclusive breastfeeding rate at six months is less than 30% in China. Improving professionals' knowledge and practical skill is a key government strategy to increase breastfeeding rates. This study aimed to test the effectiveness of a breastfeeding DVD training method for clinicians on improving their knowledge and confidence in the breastfeeding support skills of teaching mothers Positioning and Attachment (P & A) and Hand Expression (HE).
Methods
A randomised controlled trial was conducted in three hospitals in Zhejiang province, China in 2014. Participants were recruited before their routine breastfeeding training course and randomly allocated to intervention group (IG) and control group (CG). The 15 min 'Breastfeeding: Essential Support Skills DVD' was the intervention for IG and a vaginal delivery DVD was used for CG. All participants completed questionnaires of job information, knowledge and confidence in the two skills before (baseline) and immediately after viewing the DVD (post DVD).
Results
Out of 210 participants, 191 completed knowledge assessments before and after watching the DVD (IG n = 96, CG n = 95), with the response rate of 91.0%. At baseline, there are no significant differences in job variables, total knowledge scores and confident scores. The total knowledge score significantly increased post-DVD for IG (pre-DVD: M = 5.39, SD = 2.03; post-DVD: M = 7.74, SD = 1.71; t (95) = − 10.95, p < 0.01), but no significant change in total knowledge score for CG between pre- and post-DVD (pre-DVD: M = 5.67, SD = 1.70; post-DVD: M = 5.56, SD = 1.63; t (94) = 0.85). The total confidence scores were significantly higher post-DVD than pre-DVD in IG (pre-DVD: M = 66.49, SD = 11.27; post- DVD: M = 71.81, SD = 9.33; t (68) = − 4.92, p < 0.01), but no significant difference was seen in CG between pre- and post-DVD total confidence scores (pre-DVD: M = 68.33, SD = 11.08; post-DVD: M = 68.35, SD = 11.40; t (65) = − 0.25). Personal and job variables did not mediate these effects.
Conclusions
The breastfeeding training DVD improved professionals' knowledge and confidence of the two breastfeeding support skills. However, the effect on professionals' practice and on breastfeeding outcomes needs to be examined in the future.
(43 references) (Author) [Please note: BMC initially publishes articles in a provisional format. If there is a note on the document to indicate that it is still provisional, it may undergo minor changes]

Full URL: https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-018-1709-1

20171031-82

Healthcare Professionals' Attitudes and Practices in Supporting and Promoting the Breastfeeding of Preterm Infants in NICUs. Shattnawi KK (2017), Advances in Neonatal Care vol 17, no 5, October 2017, pp 390-399

Background: Breastfeeding preterm infants is shown to have important health benefits for both infants and mothers. A positive relationship between mothers and healthcare teams and supportive practices tend to facilitate maternal competence and promote early initiation of breastfeeding within neonatal intensive care units (NICUs).
Purpose: The aim of this study was to understand attitudes and behaviors of healthcare professionals toward breastfeeding practices and supporting mothers of preterm infants.
Methods: This study adopted an ethnographic research design that involved 135 hours of participant observation over a 6-month period and semistructured interviews of 10 nurses and 5 physicians.
Results: Data analysis suggests that while staff members agree with the benefits of breastfeeding for preterm infants, the actual implementation of a breastfeeding policy within NICUs is problematic. Three key themes emerged. The first described the contradiction that exists between the staff beliefs and behaviors in relation to breastfeeding and supporting mothers. The second theme was related to staff working conditions, which described the lack of institutional support and barriers to supporting breastfeeding. The final theme of controlling relationships captured the essence of the practitioner to mother association. Together, these elements revealed a situation whereby the staff appeared more preoccupied with addressing the task of caring for the babies than with supporting mothers in feeding and subsequently caring for their preterm children.
Implications for Practice: The institutional barriers to breastfeeding promotion within NICUs should be addressed by healthcare providers. Actions that provide a supportive environment within NICUs for both mothers and nurses are essential to improve the overall quality of care.
Implications for Research: Future research may include an examination of hospital policies and practices of promoting breastfeeding for preterm infants.
(28 references) (Author)

20171031-64*

Development and evaluation of a lactation rotation for a pediatric residency program. Albert JB, Heinrichs-Breen J, Belmonte FW (2017), Journal of Human Lactation vol 33, no 4, November 2017, pp 748-756

Background:
The American Academy of Pediatrics recommends that pediatricians promote and help manage breastfeeding. However, research has shown that they are not adequately prepared. To address this gap, a 2-week mandatory lactation rotation program was developed for first-year pediatric residents.
Research aim:
The aim of the study was to provide a lactation education program and to measure the residents' knowledge and perceived confidence regarding breastfeeding.
Methods:
This longitudinal self-report pretest/posttest study was conducted with a convenience sample of 45 first-year pediatric residents. Each resident spent a minimum of 50 hours with an International Board Certified Lactation Consultant. To measure breastfeeding knowledge and clinical confidence, the American Academy of Pediatrics' Breastfeeding Residency Curriculum pretest was used 4 times: first and last day of the rotation and at 6 and 12 months postrotation.
Results:
Test and confidence scores were evaluated. Statistically significant differences in knowledge were found between test 1 when compared with tests 2, 3, and 4 ($p < .001$). No significant differences were found between tests 2, 3, and 4 ($p > .05$). The abilities to 'adequately address parents' questions' and to 'completely manage common problems' were significant, with confidence increasing in tests 2, 3, and 4 ($p < .001$).
Conclusion:
As a result of an innovative, comprehensive educational lactation program, the pediatric residents' knowledge and perceived confidence related to breastfeeding significantly increased. (Author)

20171031-59*

Online lactation education for healthcare providers: a theoretical approach to understanding learning outcomes. Watkins AL, Dodgson JE, McClain DB (2017), Journal of Human Lactation vol 33, no 4, November 2017, pp 725-735

Background:
Breastfeeding competencies are not standardized in healthcare education for any of the health professions. A few

continuing education/professional development programs have been implemented, but research regarding the efficacy of these programs is scarce.
Research aim:
After a 45-hour lactation course, (a) Does breastfeeding knowledge increase? (b) Do beliefs and attitudes about infant feeding improve? (c) Does perceived behavioral control over performance of evidence-based lactation support practices increase? and (d) Do intentions to carry out evidence-based lactation support practices increase?
Methods:
A nonexperimental pretest-posttest self-report survey design was conducted with a nonprobability sample of participants (N = 71) in a lactation course. Theory of Planned Behavior variables were measured and a before-after course analysis was completed.
Results:
Significantly higher scores were found on the posttests for knowledge, beliefs about breastfeeding scale, and the perceived behavioral control scale. Participants' self-efficacy increased after the course; their beliefs about social norms and their ability to effect change in their workplaces did not change significantly. Participants' intention to perform actions that are consistent with the evidence-based breastfeeding supportive behaviors increased significantly. Positive beliefs about formula feeding significantly increased; this was unexpected.
Conclusion:
The Theory of Planned Behavior provided a useful approach for examining more meaningful learning outcomes than the traditional knowledge and/or satisfaction outcomes. This study was the first to suggest that more meaningful learning outcomes are needed to evaluate lactation programs. However, it is not enough to educate healthcare providers in evidence-based practice; the places they practice must have the infrastructure to support evidence-based practice. (Author)

Full URL: http://journals.sagepub.com/doi/full/10.1177/0890334417724348

20171011-49*

Primary Care Interventions to Support Breastfeeding: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. Patnode CD, Henninger ML, Senger CA, et al (2016), JAMA (Journal of the American Medical Association) vol 316, no 16, October 2016, pp 1694-1705

Importance Although 80% of infants in the United States start breastfeeding, only 22% are exclusively breastfed up to around 6 months as recommended by a number of professional organizations.
Objective To systematically review the evidence on the benefits and harms of breastfeeding interventions to support the US Preventive Services Task Force in updating its 2008 recommendation.
Data Sources MEDLINE, PubMed, Cumulative Index for Nursing and Allied Health Literature, Cochrane Central Register of Controlled Trials, and PsycINFO for studies published in the English language between January 1, 2008, and September 25, 2015. Studies included in the previous review were re-evaluated for inclusion. Surveillance for new evidence in targeted publications was conducted through January 26, 2016.
Study Selection Review of randomized clinical trials and before-and-after studies with concurrent controls conducted in a developed country that evaluated a primary care-relevant breastfeeding intervention among mothers of full- or near-term infants. Of 211 full-text articles reviewed, 52 studies met inclusion criteria. Thirty-one studies were newly identified, and 21 studies were carried forward from the previous review.
Data Extraction and Synthesis Independent critical appraisal of all provisionally included studies. Data were independently abstracted by one reviewer and confirmed by another.
Main Outcomes and Measures Child and maternal health outcomes, rates and duration of breastfeeding, and harms related to interventions as prespecified before data collection.
Results Fifty-two studies (n = 66 757) in 57 publications were included. Six trials (n = 2219) reported inconsistent effects of the interventions on infant health outcomes; no studies reported maternal health outcomes. Pooled estimates based on random-effects meta-analyses using the DerSimonian and Laird method indicated beneficial associations between individual-level breastfeeding interventions and any breastfeeding for less than 3 months (risk ratio [RR], 1.07 [95% CI, 1.03-1.11]; 26 studies [n = 11 588]), at 3 to less than 6 months (RR, 1.11 [95% CI, 1.04-1.18]; 23 studies [n = 8942]), and for exclusive breastfeeding for less than 3 months (RR, 1.21 [95% CI, 1.11-1.33]; 22 studies [n = 8246]), 3 to less than 6 months (RR, 1.20 [95% CI, 1.05-1.38]; 18 studies [n = 7027]), and at 6 months (RR, 1.16 [95% CI, 1.02-1.32]; 17 studies [n = 7690]). Absolute differences in the rates of any breastfeeding ranged from 14.1% in favor of the control group to 18.4% in favor of the intervention group. There was no significant association between interventions and breastfeeding initiation (RR, 1.00 [95% CI, 0.99-1.02]; 14 studies [n = 9428]). There was limited mixed evidence of an association between system-level interventions and rates of breastfeeding from well-controlled studies as well as for harms related to breastfeeding interventions, including maternal anxiety scores, decreased

confidence, and concerns about confidentiality.
Conclusions and Relevance The updated evidence confirms that breastfeeding support interventions are associated with an increase in the rates of any and exclusive breastfeeding. There are limited well-controlled studies examining the effectiveness of system-level policies and practices on rates of breastfeeding or child health and none for maternal health. (93 references) (Author)

Full URL: https://jamanetwork.com/journals/jama/fullarticle/2571248

20171011-46*

Primary Care Interventions to Support Breastfeeding: US Preventive Services Task Force Recommendation Statement. US Preventive Services Task Force (2016), JAMA (Journal of the American Medical Association) vol 316, no 16, October 2016, pp 1688-1693

Importance There is convincing evidence that breastfeeding provides substantial health benefits for children. However, nearly half of all US mothers who initially breastfeed stop doing so by 6 months, and there are significant disparities in breastfeeding rates among younger mothers and in disadvantaged communities.
Objective To update the 2008 US Preventive Services Task Force (USPSTF) recommendation on primary care interventions to promote breastfeeding.
Evidence Review The USPSTF reviewed the evidence on the effectiveness of interventions to support breastfeeding on breastfeeding initiation, duration, and exclusivity. The USPSTF also briefly reviewed the literature on the effects of these interventions on child and maternal health outcomes.
Findings The USPSTF found adequate evidence that interventions to support breastfeeding, including professional support, peer support, and formal education, change behavior and that the harms of these interventions are no greater than small. The USPSTF concludes with moderate certainty that interventions to support breastfeeding have a moderate net benefit.
Conclusions and Recommendation The USPSTF recommends providing interventions during pregnancy and after birth to support breastfeeding. (B recommendation) (19 references) (Author)

Full URL: https://jamanetwork.com/journals/jama/fullarticle/2571249

20170817-71*

Application of the EBP Process: Maximizing Lactation Support with Minimal Education. Ullman FM, Fisher MD (2017), Journal of Pediatric Nursing vol 33, March-April 2017, pp 97-100

The many advantages to providing breast milk instead of engineered infant formula for both the medically fragile and healthy term infant are well documented (Lawrence & Lawrence, 2016; Mcguire, 2011). Historically, educational efforts within neonatal intensive care units (NICUs) focused on critical diseases and conditions, as well as the highly technological management of fragile neonates. The International push to promote both the value and superiority of breast milk for infant feeding began over 3 decades ago (WHO, 1981). (12 references) (Author)

Full URL: http://www.pediatricnursing.org/article/S0882-5963(17)30009-X/fulltext

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20170803-103

Say no to success - say yes to goal setting. Spatz DL (2017), MCN - American Journal of Maternal/Child Nursing vol 42, no 4, July/August 2017, p 234

The choice of words in promoting breastfeeding is very important. Our breastfeeding expert, Dr. Spatz, urges us to consider eliminating 'success' from discussions with new mothers who are breastfeeding, and to focus instead on providing realistic information about the potential challenges and the investment in time and effort that is required, and helping them set short-term, mid-term and long term breastfeeding goals. (2 references)

20170727-104

Participation in a Quality Improvement Collaborative and Change in Maternity Care Practices. Grossniklaus DA, Perine CG, MacGowan C, et al (2017), The Journal of Perinatal Education vol 26, no 3, Summer 2017, pp 136-143

Care immediately following birth affects breastfeeding outcomes. This analysis compared improvement in maternity care practices from 2011 to 2013 among hospitals participating in a quality improvement collaborative, Best Fed Beginnings (BFB), to hospitals that applied but were not selected (non-Best Fed Beginnings [non-BFB]), and other hospitals, using Centers of Disease Control and Prevention's Maternity Practices in Infant Nutrition and Care (mPINC) survey data to calculate total and subscores for 7 care domains. Analysis of covariance compared change in scores from 2011 to 2013 among BFB, non-BFB, and other hospitals. BFB hospitals had twice the increase in mPINC score compared to non-BFB and a 3-fold increase compared to other hospitals. Learning collaborative participation may have

accelerated progress in hospitals implementing breastfeeding-supportive maternity care. (Author)

20170628-17

Health visitors' perspectives on infant and young child feeding practices: An exploratory study. Middleton C, Smyth R (2017), Journal of Health Visiting vol 5, no 6, June 2017, pp 300-306

This study explores health visitors' experiences of supporting parents with infant feeding. A constructivist grounded theory approach (Charmaz, 2014) was selected, which informed sampling, data collection and data analysis methods. Three themes were identified: influence of family, culture and ethnicity; big is beautiful; and the influence of health visitors. Participants viewed infant and young child feeding as complex and multifaceted. Misconceptions about weight were described as common, with many parents unable to identify overweight, particularly those from black and ethnic minority (BAME) communities. Health visitors have a key role in supporting families with feeding practices, although peer support was suggested as being potentially beneficial. Future research should focus on the role of health visitors in supporting nutrition in the early years, with particular emphasis on child obesity prevention. (33 references) (Author)

20161115-6*

Hospital staff's perceptions with regards to the Baby-Friendly Initiative: experience from a Canadian tertiary care centre. Pound C, Ward N, Freuchet M, et al (2016), Journal of Human Lactation vol 32, no 4, November 2016, pp 648-657

Background: Adherence to Baby Friendly Initiative (BFI) practices is low in Canadian hospitals, despite evidence showing a positive impact of BFI practices on breastfeeding rates and duration. In 2012, the provincial Ontario Ministry of Health and Long Term Care added BFI status to its progress indicators for Public Health Units, which are now required to begin BFI implementation.

Objective: This study aims to explore health care workers' self-reported knowledge of the BFI and their perceptions of the importance of its components.

Methods: A questionnaire was electronically sent to 2237 employees working at our institution.

Results: Questionnaires were completed by 651 participants, of which 110 (16.9%) and 87 (13.5%) participants reported having good knowledge of the BFI and the Ten Steps to Successful Breastfeeding, respectively. Multiple logistic regression showed that having children and having received formal breastfeeding education were associated with higher self-reported knowledge. Additionally, 481 (75%) participants reported that it was important or very important to them that the institution adopt the BFI. Having children and being an allied health professional were associated with perceiving the implementation of the BFI as important.

Conclusion: The results of our study have allowed us to identify potential barriers to implementation of the BFI, which can be targeted through system changes and staff education. Through this approach, we hope to facilitate acceptance of the BFI at our institution and increase support for optimal breastfeeding practices among our patients. (Author)

20160816-99*

UK views toward breastfeeding in public: an analysis of the public's response to the Claridge's incident. Morris C, Zaraté de la Fuente GA, Williams CE, et al (2016), Journal of Human Lactation vol 32, no 3, August 2016, pp 472-480

Background: The embarrassment that UK mothers experience when breastfeeding in public has often been cited as a key factor in the decision of the mother to discontinue breastfeeding. There is convincing evidence that many UK residents are not comfortable with women breastfeeding in public; however, little is known about the underlying reasons for this discomfort.

Objective: This study aimed to assess views on breastfeeding in public in the United Kingdom and to understand why some UK residents object to this practice.

Methods: The comments sections of news media websites and parenting forums were systematically identified and reviewed for statements made in response to an incident widely reported in the British press: a woman was asked to cover up while breastfeeding in public at Claridge's, a London luxury hotel. Of these, 805 comments (73 108 words) met the inclusion criteria and were thematically analyzed.

Results: The majority of commenters were supportive of 'discreet' breastfeeding in public, but a significant portion felt that breastfeeding in public is always inappropriate. Sexualization of the breast was mainly evoked as something others may experience while viewing a breastfeeding mother, rather than to reflect the commenters' own views. Common justifications cited against breastfeeding in public were onlookers' embarrassment (not knowing where to look) and disgust (at bodily fluids and/or functions).

Conclusion: Campaigns portraying breastfeeding in public as normal and desirable with a focus on human milk as food rather than a bodily fluid may improve societal acceptance of breastfeeding in public. (Author)

20160816-105*

Assessing the efficacy of a breastfeeding-friendly quality improvement project in a large federally qualified health center network. Rosen-Carole C, Waltermaurer E, Goudreault M, et al (2016), Journal of Human Lactation vol 32, no 3, August 2016, pp 489-497

Background: Provider attitudes can influence breastfeeding decision making, initiation, and duration, although much of this research has suffered from a 'hospital-limited view.'
Objectives: This study aimed to evaluate the effect of a Breastfeeding-Friendly Initiative (BFI) on knowledge and attitudes of providers and staff, as well as breastfeeding rates of patients within a large Federally Qualified Health Center network with no lactation consultants on staff.
Methods: We evaluated breastfeeding rates before and throughout the BFI. In addition, surveys of 136 primary care providers and staff before and after they were exposed to a breastfeeding education module were assessed to measure changes in breastfeeding knowledge and attitudes.
Results: Breastfeeding initiation and duration improved over the course of the BFI, with mean breastfeeding duration increasing by nearly 1 month following the education module compared with baseline rates (P = .01). Following participation in the breastfeeding education module, we observed a statistically significant improvement in provider and staff knowledge (P < .01) and attitudes (P < .01). These improvements were consistent across employment type, gender, geography, and personal experience as a parent.
Conclusion: Implementing a BFI in a large multispecialty primary care network was found to improve breastfeeding initiation and duration up to 1 year, with a further increase in breastfeeding duration of 1 month following a 45-minute staff education module. After exposure to this module, health care providers and staff across our network improved in breastfeeding knowledge and attitudes. Given that expectant and new mothers regularly come into contact with staff and providers in primary care, sound knowledge and positive attitudes toward breastfeeding appear to have had a favorable effect on mothers that correlates with improved breastfeeding duration. (Author)

20160727-19

Breastfeeding knowledge, attitudes and training amongst Australian community pharmacists. Ryan M, Smith J (2016), Breastfeeding Review vol 24, no 2, July 2016, pp 41-49

Introduction: Pharmacists are one of the most accessible and trusted professionals in the Australian health care system and can have a large impact in supporting and encouraging breastfeeding. Aim: This study aimed to research the knowledge, attitudes and training satisfaction of Australian pharmacists in the area of infant nutrition and breastfeeding. Design, setting and participants: The mixed method study involved quantitative data collection via an online survey and qualitative data collected via separate semi-structured interviews. All registered pharmacists in the Australian Capital Territory and surrounding regionals areas were eligible. Participants were recruited via emailed information sheets and individual onsite recruitment. Key findings: Positive attitudes towards and a desire to support and advocate for breastfeeding by pharmacists were hampered by a lack of knowledge, confidence, training and education. Conclusions and future implications: Government or other non-profit organisations can enhance community-based support for breastfeeding, including developing new education and training programs for pharmacy students and pharmacists. (34 references) (Author)

20160505-24*

Breastfeeding knowledge and attitudes of Nevada health care professionals remain virtually unchanged over 10 years. Sigman-Grant M, Kim Y (2016), Journal of Human Lactation vol 32, no 2, May 2016, pp 350-354

Background: It is prudent that health care professionals remain cognizant of breastfeeding-related issues to support nursing mothers. In 1995, Freed and colleagues noted deficits in breastfeeding knowledge among family medicine, pediatric, and obstetrics/gynecology residents and practitioners. Others reported similar findings despite calls to action and reports of successful breastfeeding interventions.
Objective: This retrospective study compared baseline breastfeeding knowledge and attitude scores from Nevada health care professionals from 2004 through 2013.
Methods: In-training and practicing professionals (pediatric/family practice/obstetric residents and attending physicians; hospital nursing staff; nursing and medical students) attended a 90-minute workshop at their sites. Following each session, attendees voluntarily completed a survey consisting of 2 knowledge and 2 attitudinal questions, using the post:pre-evaluation method, which diminishes overinflation of pretest scores as respondents can more accurately reflect their baseline levels. A Kruskal-Wallis test evaluated differences in baseline knowledge and attitude scores among 3 professional groups and for physicians over the 10-year period using Bonferroni post-hoc

analyses.
Results: A total of 889 professionals participated, with only physicians represented yearly. Except for knowledge of milk production, physician median baseline scores did not differ significantly over time. Overall, hospital nurses had significantly higher median baseline knowledge scores about initiation and frequent feeding than physicians and students. Nurses also had higher median attitude scores (likelihood of and confidence in talking with parents about breastfeeding) than physicians who had higher scores than students.
Conclusion: Despite growing societal enthusiasm and support, the baseline knowledge of and attitudes toward breastfeeding showed minimal change over 10 years. (Author)

20160411-3

Informing the midwife on the rare genetic disorders and their effects on mothers breastfeeding - a mixed methods study. Laws T, Pelentsov L, Steen M, et al (2016), Evidence Based Midwifery vol 14, no 1, March 2016, pp 11-15

Background. An inability to breastfeed is a common source of maternal distress. Genetic disorders can prevent lactation and impair mothers and infants ability to express breastmilk. Aim. The purpose of this paper is to report on the experiences of some mothers attempting to breastfeed when they or their infant have the rare genetic disorder ectodermal dysplasia. Methods. A mixed methods approach identified supportive care needs of parents caring for a child with ectodermal dysplasia. A secondary analysis determined that most mothers responding to an online survey and participating in a focus held unresolved psychological issues related to their inability to breastfeed. Mothers in this study expressed frustration with the lack of understanding held by healthcare professionals and the lack of practical support when attempting to establish breastfeeding. Emotional comorbidity was linked to perceived failure to breastfeed. Mothers requested an awareness -raising approach to assist midwives and health professionals identify feeding problems earlier. The importance of active listening to mothers' concerns and refraining from cursory judgement was identified. Implications. While genetic screening is offered to pregnant women who have a known family history of a genetic disorder, many genetic disorders are rare and go undetected. Newly birthed mothers with a genetic disorder may encounter difficulties when attempting to establish breastfeeding. More genetic education is needed to assist midwives in gaining a better understanding of how physiological problems, associated with a genetic disorder, may be a root cause of breastfeeding difficulties. (47 references) (Author)

20160408-9

Cross-cultural Obstetrics: Knowledge about pregnancy, birth and the postpartum period amongst Pedi Women. Chalmers B (1987), Journal of Psychosomatic Obstetrics & Gynecology vol 7, no 1, pp 51-61, 1987

Knowledge of events surrounding conception, pregnancy, birth and early infant care was explored by interviewing 171 Pedi women delivering in hospitals or clinics. Findings suggest that in general, knowledge about these events seems to be inadequate. In particular, knowledge about the timing of conception, the reasons underlying dietary and other behavioural practices during pregnancy, common obstetrical techniques and some facilitative breast feeding practices appears to be lacking. (Author)

20150225-99

Can breastfeeding support be taught online? An evaluation of a training package for student health visitors. Condon L, Murray J, Messer S (2015), Journal of Health Visiting vol 3, no 2, February 2015, pp 100-106

This study evaluated an online learning package developed to support student health visitors' education about health promotion in infant feeding and how best to support parents in the community. Online learning is increasingly being used in nursing education, in combination with traditional classroom-based teaching and experience in practice. To meet the needs of students across the South West of England, the University of the West of England (UWE) has developed innovative ways of delivering high-quality, evidence-based education. Study participants (n = 66) were enrolled on a specialist community public health nursing course and were part of a cohort that studied at two geographically distant venues in the South West. quantitative and qualitative data were collected using an online survey. The study found that students had the skills and ability to use the online programme, and enjoyed working at home at a self-directed time an space. Expectations of online learning packages are high in terms of professional presentation and technological quality. While students accepted the concept of online learning, some felt it was not an appropriate method to deliver training about breastfeeding. This evaluation suggest that the majority of students accept online learning as part of a blended learning package, even for practice-based subjects such as breastfeeding promoting and support. (28 references) (Author)

20150211-12*

Use of a web-based education program improves nurses' knowledge of breastfeeding. Deloian BJ, Lewin LO, O'Connor ME (2015), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 44, no 1, January/February 2015, pp 77-86

Objective
To evaluate the baseline knowledge and knowledge gained of nurses, nursing students, midwives, and nurse practitioners who completed Breastfeeding Basics, an online educational program.
Design
This study reports on an anonymous evaluation of an online breastfeeding education program developed and maintained to promote evidence-based breastfeeding practice.
Participants
Included in the study were 3736 nurses, 728 nurse practitioners/midwives, and 3106 nursing students from the United States who completed ≥ one pretest or posttest on the Breastfeeding Basics website between April 1999 and December 31, 2011.
Methods
Baseline scores were analyzed to determine if nurses' baseline knowledge varied by selected demographic variables such as age, gender, professional level, personal or partner breastfeeding experience, and whether they were required to complete the website for a job or school requirement and to determine knowledge gaps. Pretest and posttest scores on all modules and in specific questions with low pretest scores were compared as a measure of knowledge gained.
Results
Lower median pretest scores were found in student nurses (71%), males (71%), those required to take the course (75%), and those without personal breastfeeding experience (72%). The modules with the lowest median pretest scores were Anatomy/Physiology (67%), Growth and Development of the Breastfed Infant (67%), the Breastfeeding Couple (73%), and the Term Infant with Problems (60%). Posttest scores in all modules increased significantly ($p < .001$).
Conclusion
Breastfeeding Basics was used by a large number of nurses and nursing students. Gaps exist in nurses' breastfeeding knowledge. Knowledge improved in all areas based on comparison of pretest and posttest scores. (33 references) (Author)

20150204-18*

Surveying the Knowledge, Attitudes, and Practices of District of Columbia ACOG Members Related to Breastfeeding. Sims AM, Long SA, Tender JAF, et al (2015), Breastfeeding Medicine vol 10, no 1, February 2015, pp 63-68

Although the American Academy of Pediatrics and the American Congress of Obstetricians and Gynecologists (ACOG) recommend exclusive breastfeeding for the first 6 months, only 14.6% of babies born in the District of Columbia (DC) reached this goal. Breastfeeding support from providers has been shown to increase exclusive breastfeeding. We aim (1) to describe breastfeeding knowledge and attitudes, (2) to determine the presence of breastfeeding in routine prenatal discussions, and (3) to determine the knowledge of facility adoption of the Perinatal Care (PC) Core Measure Set among DC ACOG members. A survey sent to DC ACOG members assessed knowledge, attitudes, and practices related to breastfeeding and evaluated participants' barriers to breastfeeding counseling, management of breastfeeding challenges, and awareness of facility adoption of the PC Core Measure Set. All 29 respondents reported breastfeeding as the best infant nutrition and that physicians should encourage breastfeeding. However, despite 75% reporting counseling most of their patients regarding breastfeeding, only 27% reported that most of their patients were breastfeeding at the postpartum visit. Participants scored 83% correct on knowledge-based questions. Perceived barriers to breastfeeding counseling included lack of time (66%), reimbursement (10%), and competence in managing breastfeeding problems (7%). Most respondents were unsure of both adoption of, and breastfeeding data collection for, the PC Core Measure Set (52% and 55%, respectively). Participants had knowledge gaps and identified barriers to discussing breastfeeding. There was limited awareness of hospital data collection about breastfeeding. These results indicate a need for more breastfeeding education among DC obstetricians-gynecologists and better outreach about the PC Core Measure Set. (Author)

20141121-62*

Educating Pediatric Residents about Breastfeeding

Evaluation of 3 Time-Efficient Teaching Strategies. Tender JAF, Cuzzi S, Kind T, et al (2014), Journal of Human Lactation vol 30, no 4, 1 November 2014, pp 458-465

Background: Previously reported breastfeeding curricula for residents have combined different teaching methods, have focused on knowledge and attitudes, and have been time-intensive.
Objective: This study aimed to evaluate 3 time-efficient breastfeeding curricula for effectiveness in regard to pediatric residents' knowledge, confidence, and skills in managing a simulated breastfeeding scenario.
Methods: First-year pediatric residents during their 4-week community hospital newborn nursery rotation were consecutively assigned to 1 of 3 groups. Group 1 shadowed an International Board Certified Lactation Consultant (IBCLC) for 1 hour; group 2 watched a 25-minute case-based breastfeeding DVD; and group 3 observed a 3-hour prenatal parent breastfeeding class (CLS). Residents were assessed by (1) a pretest and posttest evaluating their breastfeeding knowledge and confidence, and (2) a clinical skills scenario managing a breastfeeding standardized patient (SP).
Results: Thirty-nine pediatric residents participated in the study (11 in IBCLC, 16 DVD, 12 CLS) over a 1-year period. All groups significantly improved their knowledge scores and confidence in managing breastfeeding problems, with the IBCLC group showing more improvement in knowledge than the other groups (P = .02) and a higher rating of their teaching method (P = .01). All groups performed well on the SP clinical skills scenario, with no significant difference between groups.
Conclusion: All 3 teaching methods were time-efficient and produced important gains in knowledge and confidence, with residents in the IBCLC group demonstrating greatest improvement in knowledge and a higher rating of their teaching method. Our study provides support for 3 methods of teaching residents breastfeeding management and demonstrates that IBCLCs are well-received as interprofessional educators. (29 references) (Author)

20140903-99*

Breastfeeding attitudes and knowledge in Bachelor of Science in Nursing candidates. Vandewark AC (2014), The Journal of Perinatal Education vol 23, no 3, Summer 2014, pp 135-141

Breastfeeding is an important health topic worldwide, although lack of breastfeeding knowledge is noted among health-care professionals. The purpose of this study was to explore the relationship between breastfeeding knowledge and attitudes in undergraduate nursing students at the beginning and end of their clinical education. An electronic survey, based on the Iowa Infant Feeding Attitude Scale and the Breastfeeding Knowledge Questionnaire, was administered. Attitude scores did not differ significantly between groups. Total knowledge scores between groups differed modestly (p = .006). Correlations between total knowledge and total attitude scores were found (r[89] = .482, p < .000). Respondents reported that nursing education effectively teaches breastfeeding and that breastfeeding advocacy through patient education is a crucial nursing role. (17 references) (Author)

20140701-12*

Experience of the first breastfeeding session in association with the use of the hands-on approach by healthcare professionals: A population-based Swedish study. Cato K, Sylven SM, Skalkidou A, et al (2014), Breastfeeding Medicine vol 9, no 6, July/August 2014, pp 294-300

Objective: The aim of this study was to investigate the prevalence of healthcare professionals' use of the hands-on approach during the first breastfeeding session postpartum and its possible association with the mothers' experience of their first breastfeeding session.
Materials and Methods: This was a population-based longitudinal study conducted at Uppsala University Hospital, Uppsala, Sweden, of all women giving birth at the hospital from May 2006 to June 2007. Six months postpartum, a questionnaire including questions regarding breastfeeding support, caregiving routines, depressive symptoms, and the woman's experience of the first breastfeeding session was sent to the mothers. The main outcome measures were use of the hands-on approach during the first breastfeeding session and the mother's experience of the breastfeeding session.
Results: In total, 879 women participated in the study. Thirty-eight percent of the women received the hands-on approach during the first breastfeeding session. High body mass index, primiparity, and having the first breastfeeding session postponed were all independently associated with the hands-on approach. Women who received the hands-on approach were more likely to report a negative experience of the first breastfeeding session (odds ratio=4.48; 95% confidence interval, 2.57-7.82), even after adjustment for possible confounders (odds ratio=2.37; 95% confidence interval, 1.02-5.50).
Conclusions: This study indicates that the hands-on approach is commonly used during the first breastfeeding session and is associated with a more negative experience of the first breastfeeding session. Consequently, caregivers need to question the use of this method, and further research about breastfeeding support is required. (Author) (Full article available online at http://online.liebertpub.com/doi/abs/10.1089/bfm.2014.0005)

Full URL: http://online.liebertpub.com/doi/abs/10.1089/bfm.2014.0005

20130501-5*

Breastfeeding and human lactation: education and curricular issues for pediatric nurse practitioners. Boyd AE, Spatz DL (2013), Journal of Pediatric Health Care vol 27, no 2, March-April 2013, pp 83-90

INTRODUCTION: This study explores the breastfeeding and human lactation education offered in pediatric nurse practitioner (PNP) masters-level nursing programs.
METHODS:
An online survey about breastfeeding and human lactation education offered in the PNP curriculum was sent to all PNP programs in the United States with viable contact information (N = 84). The response rate was 42.9%.
RESULTS:
All of the respondents indicated that their PNP program curriculum includes the promotion of breastfeeding. However, 5.9% of programs do not offer any courses that incorporate these topics, and 73.5% teach this content in only one to two courses. More than three quarters of programs (81.8%) offer opportunities to counsel expectant mothers on infant feeding choices, promote breastfeeding in the clinical setting, and teach breastfeeding techniques. However, 18.2% of programs do not offer any of these opportunities.
DISCUSSION:
The breastfeeding and lactation education offered in PNP programs is inconsistent. Formal incorporation of research-based lactation education into PNP curricula will help to standardize knowledge and aid in the PNP clinical role. (Author)

20120919-67

Attitudes and practices of family paediatricians in Italy regarding infant feeding. Radaelli G, Riva E, Verduci E, et al (2012), Acta Paediatrica vol 101, no 10, October 2012, pp 1063-1068

Aim: The aim of this study was to examine attitudes and practices of family paediatricians in Italy towards infant feeding. Methods: A questionnaire was sent to 850 paediatricians across Italy, asking about attitudes and practices towards infant feeding with focus on the World Health Organization's criteria. Results: The response rate was 91.2%. Breastfeeding is recommended for 6-11 months (70.6%) or longer (29.4%). A 95% of paediatricians recommend introducing complementary foods throughout 4-5.9 months. Among paediatricians who give indications about the minimum acceptable diet (61.7%), recommendations agree with WHO in 71.3% and 83.3% of cases for infants aged 6-8 or 9-11 months, respectively. A 95.6% of paediatricians recommend consumption of meat for infants aged 6 months or more, and 98.4% use of formula milk for infants having breastfeeding stopped in the first year of life. Paediatricians reported own experience (73.4%) and reading (54.2%) as main sources of information. A 70% of paediatricians know the WHO/Infant and Young Child Feeding Practices criteria regarding breastfeeding but <5% the complementary feeding indicators. Conclusion: Family paediatricians in Italy have positive disposition towards infant feeding but their knowledge and practices are suboptimal with respect to the WHO criteria, especially regarding complementary feeding. (30 references) (Author)

20120910-8*

Are you Baby-Friendly? Knowledge deficit among US maternity staff. Sadacharan R, Santana S, Sanchez E, et al (2012), Journal of Human Lactation vol 28, no 3, August 2012, pp 359-362

Background: The Baby-Friendly Hospital Initiative began in 1991. In 2010, approximately 3% of United States (US) hospitals were Baby-Friendly certified. When collecting data for related studies, we noted that many maternity staff erroneously claimed their hospital was Baby-Friendly.™ Objective: To determine whether maternity staff in US hospitals could accurately describe their institution's status with regard to Baby-Friendly certification. Methods: In 2010-2011, we called all maternity hospitals in the US and asked to be connected to the maternity service. We then asked the person answering the maternity service phone: 'Is your hospital a Baby-Friendly hospital?' and recorded the position of the respondent. Results: We called 2974 hospitals, and received answers on Baby-Friendly status from 2851. According to the Baby-Friendly USA Website (http://www.babyfriendlyusa.org), 3% (75/2851) of these hospitals were Baby-Friendly. However, staff at 62% (1780/2851) stated their hospital was Baby-Friendly. Staff at 15% (424/2851) did not know what the caller meant by 'Baby-Friendly hospital.' Accuracy of knowledge varied dependent on the respondent's job title ($P < .001$). International Board Certified Lactation Consultants were most likely to be accurate, with 89% answering correctly. There was a strong positive correlation between the proportion of Baby-Friendly hospitals and the proportion of correct responses by state ($r = 0.62$, $P < .001$). Conclusion: Although the Baby-Friendly Hospital Initiative was established over 20 years ago, most US maternity staff responding to a telephone survey either incorrectly believed their hospital to be Baby-Friendly certified or were unaware of the meaning of 'Baby-Friendly

hospital.' (Author)

20120910-15*

'BreastfeedingBasics': Web-based education that meets current knowledge competencies. Lewin LO, O'Connor ME (2012), Journal of Human Lactation vol 28, no 3, August 2012, pp 407-413

Background: The United States has not met the majority of the Centers for Disease Control and Prevention goals for breastfeeding duration. Studies have shown a lack of knowledge about breastfeeding by health care professionals and students (HCP/S). Web-based education can be a cost-effective manner of education for HCP/S. 'BreastfeedingBasics' is an online free educational program available for use. Aims: This study compares information in 'BreastfeedingBasics' to the breastfeeding knowledge competencies recommended by the US Breastfeeding Committee (USBC). It also evaluates usage of 'BreastfeedingBasics' by users and health care professional faculty. Methods: Using anonymous information from Web site users, the authors compared mean pre-test and post-test scores of the modules as a measure of the knowledge gained by HCP/S users. They evaluated usage by demographic information and used a Web-based survey to assess benefits of usage of 'BreastfeedingBasics' to faculty. Results: Overall, 15 020 HCP/S used the Web site between April 1999 and December 2009. 'BreastfeedingBasics' meets 8 of the 11 USBC knowledge competencies. Mean post-test scores increased (P < .001) for all modules. Faculty reported its benefits to be free, broad scope, and the ability to be completed on the students' own time; 84% of the faculty combined the use of 'BreastfeedingBasics' with clinical work. Conclusions: Use of 'BreastfeedingBasics' can help HCP/S meet the USBC core breastfeeding knowledge competencies and gain knowledge. Faculty are satisfied with its use. Wider use of 'BreastfeedingBasics' to help improve the knowledge of HCP/S may help in improving breastfeeding outcomes. (Author)

20120904-80*

Breastfeeding knowledge, attitude and practice among school teachers in Abha female educational district, southwestern Saudi Arabia. Al-BinAli AM (2012), International Breastfeeding Journal vol 7, no 10, 15 August 2012

Background: Inadequate knowledge, or inappropriate practice, of breastfeeding may lead to undesirable consequences. The aim of this study was to assess breastfeeding knowledge, attitude and practice (KAP) among female teachers in the Abha Female Educational District and identify factors that may affect breastfeeding practice in the study population. Methods: A cross-sectional study using a self-administered questionnaire was conducted among school teachers in Abha Female Educational District during the months of April to June, 2011. Breastfeeding KAP of participants who had at least one child aged five years or younger at the time of the study were assessed using a self-administered questionnaire, based on their experience with the last child. Results: A total of 384 women made up of 246 (61.1%) primary-, 89 (23.2%) intermediate- and 49 (12.8%) high-school teachers participated in the study. One hundred and nineteen participants (31%) started breastfeeding their children within one hour of delivery, while exclusive breastfeeding for 6 months was reported only by 32 (8.3%) participants. Insufficient breast milk and work related problems were the main reasons given by 169 (44%) and 148 (38.5%) of participants, respectively, for stopping breastfeeding before two years. Only 33 participants (8.6%) had attended classes related to breastfeeding. However, 261 participants (68%) indicated the willingness to attend such classes, if available, in future pregnancies. Conclusions: This study revealed that breast milk insufficiency and adverse work related issues were the main reasons for a very low rate of exclusive breastfeeding among female school teachers in Abha female educational district, Saudi Arabia. A very low rate of attending classes addressing the breastfeeding issues during pregnancy, and an alarming finding of a high percentage of babies receiving readymade liquid formula while still in hospital, were also brought out by the present study. Such findings, if addressed comprehensively by health care providers and decision-makers, will lead to the improvement of breastfeeding practices in the study community. [Please note: International Breastfeeding Journal initially publish articles in a provisional format. If there is a note on the document to indicate that it is still provisional, it may undergo minor changes] (34 references) (Author)

Full URL: http://www.internationalbreastfeedingjournal.com/content/7/1/10/abstract

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20120803-3

Breastfeeding - a framework for educating the primary care medical workforce. Brodribb WE (2012), Breastfeeding Review vol 20, no 2, July 2012, pp 25-30

Objective: Breastfeeding is an important public health issue with an increase in infant and maternal morbidity and mortality for artificially-fed infants and their mothers. Doctors in primary care can influence mothers' infant feeding decisions, both positively and negatively, depending on the adequacy of their training. As there is no consistent approach to educating doctors in Australia at present, the development of a curriculum outline and educational

strategies would be one step towards improving doctors' breastfeeding knowledge. Approach: Studies investigating the breastfeeding knowledge, attitudes and training opportunities of doctors in Australia were reviewed and information pertinent to breastfeeding training of doctors working in primary care obtained. This information, in conjunction with relevant literature, was used to define a breastfeeding knowledge base and identify broader educational strategies applicable for the training of doctors. Conclusion: Australian primary care doctors require further breastfeeding training to be able to provide optimum care for breastfeeding mothers and their infants. this paper formulates a breastfeeding education framework for the training of medical students, junior doctors, GP registrars and GPs. (48 references) (Author)

20120516-11*

Risk factor changes for sudden infant death syndrome after initiation of Back-to-Sleep campaign. Trachtenberg FL, Haas EA, Kinney HC, et al (2012), Pediatrics vol 129, no 4, April 2012, pp 630-638

OBJECTIVE: To test the hypothesis that the profile of sudden infant death syndrome (SIDS) changed after the Back-to-Sleep (BTS) campaign initiation, document prevalence and patterns of multiple risks, and determine the age profile of risk factors. METHODS: The San Diego SIDS/Sudden Unexplained Death in Childhood Research Project recorded risk factors for 568 SIDS deaths from 1991 to 2008 based upon standardized death scene investigations and autopsies. Risks were divided into intrinsic (eg, male gender) and extrinsic (eg, prone sleep). RESULTS: Between 1991-1993 and 1996-2008, the percentage of SIDS infants found prone decreased from 84.0% to 48.5% (P < .001), bed-sharing increased from 19.2% to 37.9% (P < .001), especially among infants <2 months (29.0% vs 63.8%), prematurity rate increased from 20.0% to 29.0% (P = .05), whereas symptoms of upper respiratory tract infection decreased from 46.6% to 24.8% (P < .001). Ninety-nine percent of SIDS infants had at least 1 risk factor, 57% had at least 2 extrinsic and 1 intrinsic risk factor, and only 5% had no extrinsic risk. The average number of risks per SIDS infant did not change after initiation of the BTS campaign. CONCLUSIONS: SIDS infants in the BTS era show more variation in risk factors. There was a consistently high prevalence of both intrinsic and especially extrinsic risks both before and during the Back-to-Sleep era. Risk reduction campaigns emphasizing the importance of avoiding multiple and simultaneous SIDS risks are essential to prevent SIDS, including among infants who may already be vulnerable. (Author) (Full article available online at http://www.pediatrics.org/cgi/doi/10.1542/peds.2011-1419)

20120327-3

Learning the hard way: expectations and experiences of infant feeding support. Redshaw M, Henderson J (2012), Birth vol 39, no 1, March 2012, pp 21-29

Background: Breastfeeding involves learning for women and their infants. For emotional, social, and developmental reasons this type of feeding is recommended for all newborn infants but for those in exceptional circumstances. The objective of this study was to gain a better understanding of what is needed in the early days to enable women to initiate and continue breastfeeding their infants. Methods: Data from a large-scale national survey of women's experience of maternity care in England were analyzed using qualitative methods, focusing on the feeding-related responses. Results: A total of 2,966 women responded to the survey (62.7% response rate), 2,054 of whom wrote open text responses, 534 relating to infant feeding. The main themes identified were 'the mismatch between women's expectations and experiences' and 'emotional reactions' at this time, 'staff behavior and attitudes,' and 'the organization of care and facilities.' Subthemes related to seeking help, conflicting advice, pressure to breastfeed, the nature of interactions with staff, and a lack of respect for women's choices, wishes, previous experience, and knowledge. Conclusions: Many women who succeeded felt that they had 'learned the hard way' and some of those who did not, felt they were perceived as 'bad mothers' and women who had in some way 'failed' at one of the earliest tasks of motherhood. What women perceived to be staff perceptions affected how they saw themselves and what they took away from their early experience of infant feeding. (22 references) (Author)

20120119-23

Paediatric nurses' knowledge and attitudes related to breastfeeding and the hospitalised infant. McLaughlin M, Fraser J, Young J, et al (2012), Breastfeeding Review vol 19, no 3, November 2011, pp 13-24

Breastfeeding and breastmilk are essential to hospitalised infants and young children and paediatric nurses are required to have breastfeeding knowledge. However, few studies have investigated paediatric nurses' knowledge and attitudes towards breastfeeding. A descriptive, cross-sectional survey design was used to investigate breastfeeding knowledge, knowledge related to breastfeeding the hospitalised infant, policy and guideline awareness, and attitudes to breastfeeding. Participants demonstrated excellent breastfeeding attitudes and general knowledge but deficits in breastfeeding knowledge related to specific outcomes were identified. (25 references) (Author)

20111213-72

A critical review of the impact of continuing breastfeeding education provided to nurses and midwives. Ward KN, Byrne JP (2011), Journal of Human Lactation vol 27, no 4, November 2011, pp 381-393

This review of 15 studies from nine different countries analyzes the practice of continuing education on breastfeeding for health professionals, with a specific focus on nurses and midwives. Continuing breastfeeding education improves the knowledge, clinical skills and practices, and counseling skills of nurses and midwives, and it improves the Baby-Friendly Hospital Initiative compliance of institutions. Education of any duration is beneficial; however, findings support the recommendation of the World Health Organization that at least 18 hours' education for all health professionals who advise pregnant women and mothers should be undertaken. (59 references) (Author)

20111208-25*

Evidence-based care for breastfeeding mothers: a resource for midwives and allied healthcare professionals. Pollard M (2012), London: Routledge 2012. 256 pages

Breastfeeding is a major public health issue. Breast milk provides all the nutrients a baby needs for the first six months. Research studies also show that breastfeeding doesn't just help to protect infants from infection, but has other benefits such as reducing obesity and can help protect mothers from other diseases later in life. Breastfeeding rates are low, however, and women need the support of their midwives and health visitors when beginning breastfeeding and throughout their child's infancy. Based on the UNICEF UK BFI Best Practice Standards for Higher Education Institutions, this accessible textbook addresses all 18 outcomes to ensure that students are equipped with the essential knowledge and skills to effectively promote and support breastfeeding mothers. (289 references) (Publisher, edited)

20111122-6

Breastfeeding knowledge of university nursing students. Ahmed A, Bantz D, Richardson C (2011), MCN - American Journal of Maternal/Child Nursing vol 36, no 6, November/December 2011, pp 361-367

OBJECTIVE: To assess breastfeeding knowledge among senior nursing students and identify the types of breastfeeding knowledge the students have. We also investigated the relationship between the different types of breastfeeding knowledge. STUDY DESIGN AND METHODS: An exploratory descriptive design used a convenience sample of 115 students from two schools of nursing in two Midwestern universities. Students who completed maternal/child nursing didactic and clinical courses were eligible to participate. A Breastfeeding Knowledge Questionnaire adapted from Brodribb, Fallon, Jackson, and Hegney (2008) was used. The questionnaire consisted of 24 items covering knowledge about benefits of breastfeeding, physiology of lactation, and breastfeeding management. Content and face validity were considered, and Cronbach's α for internal consistency was 0.70. Eligible students completed the questionnaire in class. Descriptive and inferential statistics were used to describe student knowledge and to test the differences in breastfeeding knowledge. RESULTS: Findings revealed a mean knowledge score of 17 ± 2.9 (total possible score 24). There was a significant difference in the students' knowledge regarding physiology of lactation and benefits of breastfeeding ($t = -3.615$, $p = .000$) and between benefits and breastfeeding management ($t = 5.255$, $p = .000$). There was a positive relationship between knowledge of physiology of lactation and breastfeeding management ($r = 0.369$, $p = .000$). CLINICAL IMPLICATIONS: Strategies are warranted to improve breastfeeding education in the nursing curriculum, focusing on breastfeeding management skills. (29 references) (Author)

20110602-17

An organisation-wide approach to training community practitioners in breastfeeding. Wallace LM, Law SM, Joshi P, et al (2011), Community Practitioner vol 84, no 6, June 2011, pp 31-34

A new self-study training programme was delivered to community practitioners as part of an organisation-wide breastfeeding training programme. Knowledge outcomes were measured before and after the training using the Coventry University Breastfeeding Assessment. Interviews with participants found the programme was well received and seen as a key way to ensure consistent evidence-based practice. practitioners across all professional groups increased knowledge scores after training. Independent evaluation showed that self-study is flexible and acceptable, but requires self-motivation as well as basic computer skills and access. Self-study is potentially more affordable, and could provide a means to regularly refresh the knowledge of staff and bring new recruits to the same objectively assessed standard. Recommendations include the use of learning sets to encourage team learning, and the production of a combined web and hard copy programme came from the learning achieved by piloting this new programme. (11 references) (Author)

20110310-40*

Different attitudes during breastfeeding consultations when infant formula was given: a phenomenographic approach. Zwedberg S, Naeslund L (2011), International Breastfeeding Journal vol 6, no 1, 31 January 2011, 8 pages

Background: WHO and UNICEF believe that both antenatal and maternity care organizations are in an excellent position to protect and, if necessary, reinstate a culture that promotes breastfeeding, and that they are responsible for doing so. In Sweden, the number of breastfeeding women has been decreasing annually since 1996. Thus the aim of this study is to identify, describe and analyze the attitude midwives have towards the mother, child and breastfeeding when infant formula is given. Methods: From the theoretical standpoint of Buber's I-Thou and I-It concept, the different attitudes during breastfeeding consultations are interpreted. By using a phenomenographic approach based on 101 accounts of varying lengths from 39 midwives, different attitudes or approaches were identified. Results: Four different approaches are distinguished in the breastfeeding consultation. The first is the family as a whole, the second is mother and child as separate and equal, the third views the mother as superior and the fourth views the child as superior. Conclusions: The approach of the midwife is related to how she defines the overall perspective of the mother-child relationship and how she looks upon her relationship to the mother-child dyad. Her approach varies depending on whether she meets the mother and child as a subject, similar to herself, or whether she sees one of them as an object. A midwife may also take an outside position, as an object, thus excluding a genuine relationship with the mother. The results also indicate that health care professionals focus on parts of the whole instead of maintaining a holistic perspective. [The full text of this article can be accessed at: http://www.internationalbreastfeedingjournal.com/content/pdf/1746-4358-6-1.pdf] (30 references) (Author)

Full URL: http://www.internationalbreastfeedingjournal.com/content/pdf/1746-4358-6-1.pdf

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20110228-49

Breastfeeding intentions of female physicians. Sattari M, Levine D, Bertram A, et al (2011), Breastfeeding Medicine vol 5, no 6, December 2010, 297-302

BACKGROUND: It is known that physician mothers' breastfeeding behavior impacts their anticipatory guidance to their patients, which in turn influences patients' breastfeeding initiation and continuation. Therefore, studying physician mothers' breastfeeding behavior is important, as it impacts not only the well-being of themselves and their families, but eventually the well-being of their patients and patients' families. However, previous studies of breastfeeding among physician mothers in the United States have not explored their breastfeeding intentions. We therefore sought to explore infant feeding intentions of physician mothers. METHODS: We report data gathered from 50 physician volunteers, mainly affiliated with Johns Hopkins University (Baltimore, MD), using a questionnaire. RESULTS: Consistent with previous physician studies, we found high breastfeeding initiation rates among our participants. However, the breastfeeding continuation rates of mothers in our study at 6 and 12 months were higher than those reported in previous physician studies. Our data showed that while physician mothers intended to breastfeed 64% of the infants for at least 12 months and while 97% of infants were breastfed at birth, only 41% continued to receive breastmilk at 12 months. This discrepancy suggests that work-related factors may influence physician mothers' breastfeeding behavior and might have a larger impact than these mothers' education and intentions on breastfeeding duration. CONCLUSION: This finding supports implementing workplace strategies and programs to promote breastfeeding duration among physician mothers returning to work. (27 references) (Author)

20110211-19

Assessment of breastfeeding information in general obstetrics and gynecology textbooks. Ogburn T, Philipp BL, Espey E, et al (2011), Journal of Human Lactation vol 27, no 1, February 2011, pp 58-62

The purpose of this study was to determine if breastfeeding information in obstetrics/gynecology textbooks is complete, current, and evidence-based. Five general obstetrics/gynecology textbooks were reviewed to assess 22 basic breastfeeding facts. Five reviewers reviewed each text to determine the number of items presented, the number omitted, and the accuracy of the information. The mean number of breastfeeding facts present in each textbook was 14.6 (10-20), the mean number present and correct was 12.6 (5-18), present but incorrect/inconsistent 2 (0-5), and omitted 7.4 (2-12). The facts in the texts were usually correct. The percentages of correct answers for each text were 50%, 80%, 90%, 95%, and 100%, respectively. However, there were significant omissions; two of the texts missed half of the criteria scored. Scores for Omitted/(Reviewed + Omitted) were 9%, 14%, 36%, 55%, and 55%. Overall, breastfeeding information in obstetrics/gynecology textbooks is variable and there are often significant omissions and/or inaccuracies. (16 references) (Author)

20110105-28

Success of an educational intervention on maternal/newborn nurses' breastfeeding knowledge and attitudes. Bernaix LW, Beaman ML, Schmidt CA, et al (2010), JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing vol 39, no 6, November/December 2010, pp 658-666

OBJECTIVE: To test the effect of a breastfeeding educational program for improving breastfeeding knowledge, attitudes, and beliefs of maternal/newborn nurses, and to improve their intentions to provide breastfeeding support to new mothers. DESIGN: Quasi-experimental, pretest/posttest design. SETTING: Maternity units of 13 hospitals located in midwestern and east coast states. PARTICIPANTS: Nine experimental and three control hospital sites resulted in a convenience sample size of 240 registered nurses (RNs); 206 RNs in the experimental sites and 34 RNs in the control sites. METHODS: Participation in the experimental groups involved the completion of two questionnaires upon study entry and then again after completion of a self-study module. Participants in the control groups completed the two questionnaires twice with a 4- to 6-week interval between them without access to the self-study module. MAIN OUTCOME MEASURES: Nurses' breastfeeding knowledge, attitudes, beliefs, and intentions to support postpartum mothers who are breastfeeding. RESULTS: Findings suggest that this educational strategy was effective in improving maternal/newborn nurses' breastfeeding knowledge, attitudes, and beliefs, and intentions to support breastfeeding mothers. CONCLUSION: This self-paced, study module, which is guided by an on-site, trained staff member, may be a cost-effective strategy for improving nurses' breastfeeding knowledge and support to new breastfeeding mothers. Nurses may find this type of teaching modality to be less intimidating than a structured classroom setting, and more desirable for their busy schedules. (23 references) (Author)

20100916-30

Residency curriculum improves breastfeeding care. Feldman-Winter L, Barone L, Milcarek B, et al (2010), Pediatrics vol 126, no 2, August 2010, pp 289-297

OBJECTIVES: Multiple studies have revealed inadequacies in breastfeeding education during residency, and results of recent studies have confirmed that attitudes of practicing pediatricians toward breastfeeding are deteriorating. In this we study evaluated whether a residency curriculum improved physician knowledge, practice patterns, and confidence in providing breastfeeding care and whether implementation of this curriculum was associated with increased breastfeeding rates in patients. SUBJECTS AND METHODS: A prospective cohort of 417 residents was enrolled in a controlled trial of a novel curriculum developed by the American Academy of Pediatrics in conjunction with experts from the American College of Obstetricians and Gynecologists, American Academy of Family Physicians, and Association of Pediatric Program Directors. Six intervention residency programs implemented the curriculum, whereas 7 control programs did not. Residents completed pretests and posttests before and after implementation. Breastfeeding rates were derived from randomly selected medical charts in hospitals and clinics at which residents trained. RESULTS: Trained residents were more likely to show improvements in knowledge (odds ratio [OR]: 2.8 [95% confidence interval (CI): 1.5-5.0]), practice patterns related to breastfeeding (OR: 2.2 [95% CI: 1.3-3.7]), and confidence (OR: 2.4 [95% CI: 1.4-4.1]) than residents at control sites. Infants at the institutions in which the curriculum was implemented were more likely to breastfeed exclusively 6 months after intervention (OR: 4.1 [95% CI: 1.8-9.7]). CONCLUSIONS: A targeted breastfeeding curriculum for residents in pediatrics, family medicine, and obstetrics and gynecology improves knowledge, practice patterns, and confidence in breastfeeding management in residents and increases exclusive breastfeeding in their patients. Implementation of this curriculum may similarly benefit other institutions. (17 references) (Author)

20100901-15

Practice improvement, breastfeeding duration and health visitors. Spencer RL, Greatrex-White S, Fraser DM (2010), Community Practitioner vol 83, no 9, September 2010, pp 19-22

The primary purpose of practice improvement is to improve clinical practice through changing the behaviour of healthcare professionals. Breastfeeding is a key public health issue, conferring benefits associated with both infant and maternal health, yet breastfeeding rates in the UK and Ireland are among the lowest in Western Europe. In this paper, the ways in which practice improvement can be utilised to enhance both efficiency and effectiveness are described, using a cast study of the potential contribution of health visitors to increasing breastfeeding duration in primary care in order to illustrate this in clinical practice. (38 references) (Author)

20100827-5*

A qualitative study of the promotion of exclusive breastfeeding by health professionals in Niamey, Niger. Abba AM, Koninck MD, Hamelin A (2010), International Breastfeeding Journal vol 5, no 8, 8 August 2010, 7 pages

Background: The practice of exclusive breastfeeding depends on various factors related to both mothers and their environment, including the services delivered by health professionals. It is known that support and counseling by health professionals can improve rates, early initiation and total duration of breastfeeding, particularly exclusive breastfeeding. Mothers' decisions are influenced by health professionals' advice. However, in Niger the practice of exclusive breastfeeding is almost non-existent. The purpose of this exploratory study, of which some results are presented here, was to document health professionals' attitudes and practices with regard to exclusive breastfeeding promotion in hospital settings in the urban community of Niamey, Niger. Methods: Fieldwork was conducted in Niamey, Niger. A qualitative approach was employed. Health professionals' practices were observed in a sample of frontline public healthcare facilities. Results: The field observation results presented here indicate that exclusive breastfeeding is not promoted in healthcare facilities because the health professionals do not encourage it and their practices are inappropriate. Some still have limited knowledge or are misinformed about this practice or do not believe in it. They do not systematically discuss exclusive breastfeeding with mothers, or they mention it only briefly and without giving any explanation. Worse still, some encourage the use of breast milk substitutes, which are frequently promoted in healthcare facilities. Thus mothers often receive contradictory messages. Conclusion: The results suggest the need to train or retrain health professionals with regard to exclusive breastfeeding, and regularly supervise their activities.[The full text of this article can be accessed at: http://www.internationalbreastfeedingjournal.com/content/pdf/1746-4358-5-8.pdf] (40 references) (Author)

20100324-70

Breastfeeding - a retrospective view across culture and time. O'Neale T (2009), ABM [Association of Breastfeeding Mothers] Summer 2009, pp 7-8

Written in response to a mother who felt ostracised for breastfeeding in public, this article describes the author's experience of breastfeeding six children across four countries and three decades. Her conclusion is that there is still a long way to go in the UK before breastfeeding in public is completely accepted.

20090806-13

Health Professional Knowledge of Breastfeeding: Are the Health Risks of Infant Formula Feeding Accurately Conveyed by the Titles and Abstracts of Journal Articles?. Smith J, Dunstone M, Elliott-Rudder M (2009), Journal of Human Lactation vol 25, no 3, August 2009, pp 350-358

Effective promotion of breastfeeding is constrained if health professionals' knowledge on its importance is deficient. This study asks whether formula feeding is named as the risk factor in published research or whether it is considered the unspoken norm. A systematic analysis is conducted of the information content of titles and abstracts of 78 studies that report poorer health among formula-fed infants. This shows a surprising silence in the studies examined; formula is rarely named in publication titles or abstracts as an exposure increasing health risk. In 30% of cases, titles imply misleadingly that breastfeeding raises health risk. Only 11% of abstracts identify formula feeding as a health risk exposure. Initiatives to increase breastfeeding have described the importance of accurate language and well-informed health professional support. If widespread, this skew in communication of research findings may reduce health professionals' knowledge and support for breastfeeding. (112 references) (Author)

20090616-22

A new approach to breastfeeding training. Wallace LM, Dunn OM, Law S, et al (2009), Practising Midwife vol 12, no 6, June 2009, pp 47-49

Louise M Wallace, Orla M Dunn, Susan Law and Carol Bryce describe a workbook-based method of delivering Baby Friendly Initiative training. (11 references) (Author)

20090506-107

Breastfeeding knowledge, attitudes, and practices among providers in a medical home. Szucs KA, Miracle DJ, Rosenman MB (2009), Breastfeeding Medicine vol 4, no 1, March 2009, pp 31-42

OBJECTIVE: Breastfeeding offers numerous health advantages to children, mothers, and society. From obstetrics to pediatrics, breastfeeding dyads come in contact with a wide range of healthcare providers. The American Academy of Pediatrics (AAP) calls for pediatricians to support breastfeeding enthusiastically and for all children to have a medical home. We studied an inner-city healthcare system with a Dyson Community Pediatrics Training Initiative Model Medical Home clinic, to explore how a breastfeeding/baby-friendly medical home might be built upon this framework. We describe breastfeeding knowledge, attitudes, and practices among a full range of providers and healthcare system-level barriers to effective and coordinated breastfeeding services. METHODS: We conducted eight

focus groups using semistructured interviews: (1) pediatricians; (2) obstetricians; (3) pediatric nurses and allied health professionals; (4) obstetric nurses and allied health professionals; (5) 24-hour telephone triage answering service nurses; (6) public health nurses; (7) Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) personnel; and (8) lactation consultants and peer counselors. RESULTS: We identified gaps in providers' breastfeeding knowledge, counseling skills, and professional education and training. Providers' cultures and attitudes affect breastfeeding promotion and support. Providers used their own breastfeeding experiences to replace evidence-based knowledge and AAP policy statement recommendations for breastfeeding dyads. There were communication disconnects between provider groups. Providers underestimated their own, and overestimated others', influence on breastfeeding. The system lacked a coordinated breastfeeding mission. CONCLUSIONS: This study illuminated key disconnectedness challenges (and, hence, opportunities) for a model medical home in fostering continuous, comprehensive, coordinated, culturally effective, and evidence-based breastfeeding promotion and support. (45 references) (Author)

20090331-36

Hospital Education in Lactation Practices (Project HELP): does clinician education affect breastfeeding initiation and exclusivity in the hospital?. Grossman X, Chaudhuri J, Feldman-Winter L, et al (2009), Birth vol 36, no 1, March 2009, pp 54-59

BACKGROUND: A woman's decision to breastfeed may be influenced by her health care practitioners, but breastfeeding knowledge among clinicians is often lacking. Project HELP (Hospital Education in Lactation Practices) was an intensive education program designed to increase breastfeeding knowledge among health care practitioners. The purpose of this study was to determine whether educating practitioners affected breastfeeding initiation and exclusivity rates at hospitals with low breastfeeding rates. METHODS: Between March 31, 2005, and April 24, 2006, we taught courses at four Massachusetts hospitals with low breastfeeding rates. Each course consisted of three, 4-hour teaching sessions and was offered nine times. The training, taught by public health professionals, perinatal clinicians, and peer counselors, covered a broad range of breastfeeding-related topics, from managing hyperbilirubinemia to providing culturally competent care. Medical records of infants born before and after the intervention were reviewed to determine demographics and infant feeding patterns. RESULTS: Combining data from all hospitals, breastfeeding initiation increased postintervention from 58.5 to 64.7 percent ($p = 0.02$). An overall increase in exclusive breastfeeding rates was not statistically significant. In multivariate logistic regression for all hospitals combined, infants born postintervention were significantly more likely to initiate breastfeeding than infants born preintervention (adjusted OR 1.32, 95% CI 1.03-1.69). CONCLUSIONS: Intensive breastfeeding education for health care practitioners can increase breastfeeding initiation rates. (27 references) (Author)

20090209-125*

Health professionals' advice for breastfeeding problems: Not good enough!. Amir LH, Ingram J (2008), International Breastfeeding Journal vol 3, no 22, 11 September 2008, 2 pages

Jane Scott and colleagues have recently published a paper (1) in the International Breastfeeding Journal showing that health professionals are still giving harmful advice to women with mastitis. We see the management of mastitis as an illustration of health professionals' management of wider breastfeeding issues. If health professionals don't know how to manage this common problem, how can they be expected to manage less common conditions such as a breast abscess or nipple/breast candidiasis? There is an urgent need for more clinical research into breastfeeding problems and to improve the education of health professionals to enable them to promote breastfeeding and support breastfeeding women. [The full text of this article can be accessed at: http://www.internationalbreastfeedingjournal.com/content/pdf/1746-4358-3-22.pdf] (20 references) (Author)

1. Scott JA et al. Occurrence of lactational mastitis and medical management: A prospective cohort study in Glasgow. International Breastfeeding Journal, vol 3, no 21, 25 August 2008.

20081110-19

Breastfeeding and Australian GP registrars--their knowledge and attitudes. Brodribb W, Fallon A, Jackson C, et al (2008), Journal of Human Lactation vol 24, no 4, November 2008, pp 422-430

The aim of this study was to identify the breastfeeding attitudes and knowledge of a sample of Australian general practice (GP) registrars and investigate how confident and effective they thought their interactions with breastfeeding women were. Between February and May 2007, a 90-item questionnaire containing demographic, attitude, and knowledge items was distributed to final-year Australian GP registrars. The mean attitude score (5 = maximum score) was 3.99. The mean knowledge score (5 = maximum score) was 3.40, indicating some degree of breastfeeding knowledge. However, 40% of the knowledge items were answered incorrectly by the majority of participants.

Approximately 40% of the cohort were confident and thought they were effective assisting breastfeeding women. Having more than 26 weeks personal experience with breastfeeding (self or partner) increased breastfeeding knowledge, attitudes, confidence, and effectiveness. Further targeted training is needed to improve Australian GP registrars' breastfeeding knowledge, attitudes, confidence, and effectiveness. (42 references) (Author)

20081013-1*

Is breastfeeding really invisible, or did the health care system just choose not to notice it?. Mulford C (2008), International Breastfeeding Journal vol 3, no 13, 4 August 2008, 3 pages

There are innumerable myths and misconceptions about breastfeeding that minimize its importance; these often keep health workers from providing effective care to support and protect breastfeeding. They are compounded by lack of basic and applied research, and by the cultural invisibility of breastfeeding in the United States. This paper highlights some of the blind spots and suggests the importance of an approach that places breastfeeding promotion and advocacy within the context of women's lives. As we work to ensure that the health care system provides good breastfeeding care, we need to guard against letting the medicalization of infant feeding keep us from remembering that breastfeeding is something that mothers and children do, in all the aspects of their private and public lives. (4 references) (Author)

20081009-97

The relationship between personal breastfeeding experience and the breastfeeding attitudes, knowledge, confidence and effectiveness of Australian GP registrars. Brodribb W, Fallon A, Jackson C, et al (2008), Maternal & Child Nutrition vol 4, no 4, October 2008, pp 264-274

In conjunction with other health professionals, doctors believe they play an important role in promoting breastfeeding to women. Although many have positive breastfeeding attitudes, significant knowledge deficits often limit their capacity to effectively encourage, support and assist breastfeeding women and their infants. Personal breastfeeding experience (of self or partner) may be the main source of breastfeeding knowledge and skill development and is related to improved knowledge, more positive attitudes and greater confidence. This paper describes the relationship between the cumulative length of personal breastfeeding experience and the breastfeeding knowledge and attitudes of a cohort of Australian general practice (GP) registrars, as well as their confidence and perceived effectiveness assisting breastfeeding women. The Australian Breastfeeding Knowledge and Attitude Questionnaire containing demographic items, a 20-item attitude scale and a 40-item knowledge scale was distributed between February and May 2007 to Australian GP registrars in their final year of training. Participants with more than 52-week cumulative personal (self or partner) breastfeeding experience had the highest mean knowledge score, had more positive attitudes, and were more confident and effective than all other participants. Parents with limited personal experience (<or=26 weeks) had the poorest breastfeeding attitudes and their knowledge base was similar to participants with no personal experience. Confidence and perceived effectiveness when assisting breastfeeding women rose with increasing cumulative breastfeeding experience. Personal breastfeeding experience per se does not guarantee better breastfeeding knowledge or attitudes although increasing length of experience is related to higher knowledge, attitude, confidence and perceived effectiveness scores. (55 references) (Author)

20080814-6

The promotion of breastfeeding: the contribution of qualitative research. Brook Y (2008), MIDIRS Midwifery Digest vol 18, no 3, September 2008, pp 325-328

This article arises from an assignment designed to explore the contribution of qualitative research and how it can be applied to a particular health practice. The promotion of breastfeeding was chosen because it is a rich source of qualitative studies which highlight aspects of the provision of midwifery practice. The article includes summaries of a number of qualitative studies and discussion on their contribution to existing knowledge and clinical practice. The under-utilisation of qualitative research by the Department of Health (DH), policy writers and service planners is highlighted. The benefits of qualitative research versus quantitative research in relation to the promotion of breastfeeding are also discussed. (20 references) (Author)

20080812-31

Who supports breastfeeding?. Clifford J, McIntyre E (2008), Breastfeeding Review vol 16, no 2, July 2008, pp 9-19

`Breastfeeding is best for baby' is the view supported by many health organisations including Australia's National Health and Medical Research Council (NHMRC) and the World Health Organization (WHO). This literature review of both quantitative and qualitative studies was conducted to determine who supports women to breastfeed

successfully in the current environment. Results indicate that fathers, other family members and friends can have a significant impact in supporting breastfeeding if they are positive about breastfeeding and have the skills to support breastfeeding. Health professionals are more effective in their support if their attitude to breastfeeding is positive and they have appropriate knowledge and skills to help the breastfeeding mother, something that is often lacking in their training. Peer counsellors and breastfeeding support groups are very effective but only if women access them. Employers and the community know about the benefits of breastfeeding; however, they do not provide much support for breastfeeding. For breastfeeding to be better supported, family and friends need to be more aware of the importance of breastfeeding and how to help mothers; health professionals need more effective training in supporting breastfeeding; peer counsellors and breastfeeding support groups need to be more accessible to breastfeeding women; and employers and the community need to be more breastfeeding friendly. (188 references) (Author)

20080716-24*

Health visitors and breastfeeding support: influence of knowledge and self-efficacy. Kronborg H, Vaeth M, Olsen J, et al (2008), European Journal of Public Health vol 18, no 3, June 2008, pp 283-288

BACKGROUND: Little is known about what influences health visitors' breastfeeding support. The objective was to describe health visitors' breastfeeding experiences, beliefs, knowledge and self-efficacy in breastfeeding guidance and determine the impact of a training course on these factors, and how they were reflected in practice. METHODS: A randomized intervention study enrolled 52 health visitors in the intervention group and 57 in the comparison group. The intervention group participated in an 18-hour pre-study training course that focused on knowledge about lactation and how to guide the mother to learn the mechanisms of breastfeeding. Data were collected through self-administered questionnaires before the intervention and after the follow-up period. One hundred and six (97%) health visitors and 1302 (82%) mothers responded. RESULTS: At baseline no substantial differences were seen between the two groups on years since education, own breastfeeding experiences, beliefs or self-efficacy in breastfeeding guidance except that health visitors in the intervention group, who had completed the course, demonstrated significantly higher scores on knowledge questions ($P < 0.01$). After the intervention health visitors in the intervention group reported significantly higher self-efficacy in guidance on three of five breastfeeding problems ($P < 0.01$). Mothers in the intervention group reported having received more support than mothers in the comparison group. CONCLUSION: An interactive course increased the health visitors' knowledge of breastfeeding practice. After the intervention period the health visitors in the intervention group had increased their self-efficacy in helping mothers with common breastfeeding problems. The mothers in the intervention group reported more informational and instrumental breastfeeding support. (Author)

20080618-30*

Breast feeding [written answer]. House of Commons (2008), Hansard vol 477, no 112, 17 June 2008, col 875W

Dawn Primarolo responds to a written question by Mrs Maria Miller to the Secretary of State for Health, regarding how many trained health professionals have received training in giving breastfeeding advice; and what assessment he has made of the effectiveness of that training. (CR)

20080506-14*

Assessing midwives' breastfeeding knowledge: Properties of the Newborn Feeding Ability questionnaire and Breastfeeding Initiation Practices scale. Creedy DK, Cantrill RM, Cooke M (2008), International Breastfeeding Journal vol 3, no 7, 30 April 2008,

Background: There are few reliable and valid tools to assess lactation and infant feeding knowledge and practices. This study tested the psychometric properties of two new scales, the Newborn Feeding Ability (NFA) questionnaire and Breastfeeding Initiation Practices (BIP) scale to assess midwives' breastfeeding knowledge and practice specific to breastfeeding initiation. Methods: A national postal survey of Australian midwives (n = 3500) which was conducted in October 2001. Reliability was determined through Cronbach's alpha coefficient and stability determined by a test-retest. Content validity was established through a critical review of the literature and review by an expert panel. Construct validity was informed by an exploratory factor analysis and principle component analysis with varimax rotation. Correlations between NFA and BKQ knowledge subscale scores and BIP and BKQ practice subscale scores assessed criterion validity. A multiple hierarchical regression analysis determined predictive validity of the NFA and BIP. Results: A response rate of 31.6% (n = 1107) was achieved. Adequate internal consistency was established for both instruments. Five factors on the NFA questionnaire were congruent with knowledge about effects of skin-to-skin contact, physiological stability, newborn innate abilities, work practices, and effective breastfeeding. The BIP revealed

three factors related to observing pre-feeding behavior, mother/baby care, and attachment and positioning practices. Predictive validity of knowledge was moderate (r = .481, p <.01) and contributed 31.5% of variance in reported practice. Midwives with high knowledge scores were more likely to report best practice when assisting mothers to initiate breastfeeding. Midwives with more personal breastfeeding experience scored higher on all scales. Conclusions: The Newborn Feeding Ability questionnaire and the Breastfeeding Initiation Practices scale can contribute to practice development by assessing lactation and infant feeding knowledge and practice deficits. Individual learning needs can be identified, and effectiveness of education interventions evaluated using these tools. Further testing is required with other samples of midwives and health professionals involved in the promotion of breastfeeding. (68 references) (Author)

20080207-66

Bridging the breastfeeding knowledge gap. Wallace L (2008), Practising Midwife vol 11, no 2, February 2008, pp 38, 40-41

Louise Wallace explains how Coventry University is delivering new training and assessment in breastfeeding support skills and knowledge for healthcare workers. (3 references) (Author)

20080124-80*

The emotions of integrating breastfeeding knowledge into practice for English midwives: a qualitative study. Furber CM, Thomson AM (2008), International Journal of Nursing Studies vol 45, no 2, February 2008, pp 286-297

BACKGROUND: Breastfeeding prevalence in the United Kingdom is one of the lowest in Europe. The midwife provides feeding support for new mothers but research suggests that midwives' knowledge of breastfeeding is limited. OBJECTIVE: To discover the views of English midwives in relation to their breastfeeding support role. DESIGN: Qualitative design. SETTINGS: Two maternity hospitals in Northwest England. PARTICIPANTS: Thirty midwives who cared for normal, healthy babies. Midwives were selected for interview using theoretical sampling principles from a pool of midwives who volunteered. Volunteers were accessed using a poster exhibited in relevant clinical areas. METHODS: Data were collected using audiotaped, in-depth interviews and were analysed using constant comparison techniques. RESULTS: The study highlights that differing professional knowledge and beliefs about breastfeeding support created intense, mainly negative, emotions for these midwives. Irritation and despair was experienced with the greater emphasis placed on research, rather than practice knowledge in policy and recommendations for practice. Disappointment was experienced when mothers did not conform to midwives' expectations. Conflict with differing peer-based knowledge generated feelings of intimidation and annoyance for some midwives. Some midwives demonstrated that they can sustain clinical decisions whilst based in a hostile environment, but others conformed to the practice expectations of their peers. Happiness was experienced when midwives described positive relationships with mothers, rather than their professional colleagues. CONCLUSIONS: The utilisation of professional knowledge in breastfeeding practice was a highly complex issue, and generated significant negative emotional distress, for these midwives. (Author)

20071119-38

Breastfeeding information in nursing textbooks needs improvement. Philipp BL, McMahon MJ, Davies S, et al (2007), Journal of Human Lactation vol 23, no 4, November 2007, pp 345-349

The objective of this study was to determine if breastfeeding information in maternal-child (nursing) textbooks used in the United States is accurate and up to date. Six nursing textbooks, all published since 1999, were reviewed using a standardized scoring sheet. Five reviewers (1 pediatrician, 2 lactation consultants, 1 nurse, and 1 research assistant) examined breastfeeding content in each text. Each textbook was graded for inclusion of 20 basic breastfeeding facts derived from recommendations from the American Academy of Pediatrics and the World Health Organization. Of the 20 criteria scored, the mean number present was 17 (range, 14-19). For each category, the mean number of criteria was correct (11.8; range, 10-15) incorrect (5.2; range, 2-8), and omitted (3.0; range, 1-6). The scores were Pilliteri 10/20 (50%), Ladewig 11/20 (55%), Leifer 11/20 (55%), Ball 12/20 (60%), London 12/20 (60%), and Klossner 15/20 (75%). Thus, breastfeeding information in these nursing textbooks, when not omitted, was at times found to be inaccurate and inconsistent. (13 references) (Author)

20071108-74*

Outcomes of a breastfeeding educational intervention for baccalaureate nursing students. Dodgson JE, Tarrant M (2007), Nurse Education Today vol 27, no 8, November 2007, pp 856-867

Educational institutions have the responsibility to provide students with knowledge and practical experiences of best practices and international standards of care. Worldwide, international standards for appropriate and effective

breastfeeding promotion and services often have not been met. The aim of this study was to determine the effectiveness of an infant feeding educational intervention on student nurses' knowledge levels about (1) evidence-based breastfeeding promotion, (2) evidence-based beliefs about outcomes of breastfeeding and formula-feeding, (3) evidence-based attitudes toward breastfeeding and formula-feeding, and (4) intention to perform evidence-based breastfeeding promotion behaviors. A quasi-experimental intervention with a non-equivalent control group was conducted at a major university in Hong Kong. The intervention group (n=111) received 10h of didactic instruction and an 8-week perinatal clinical rotation while the control group (n=162) did not. The intervention group was significantly more likely to associate breastfeeding with positive maternal and child outcomes. Attitudes toward breastfeeding and formula-feeding were not significantly affected by the educational intervention. On the 19-item knowledge survey, the control group (M=6.84; SD=2.95) scored significantly lower than the intervention group (M=10.30; SD=2.51). A public health breastfeeding promotion strategy frequently overlooked is professional-level curricular interventions. Improving evidence-based practices in nursing programs has the potential to impact many breastfeeding families in the hospital and the community. (Author)

20070402-11

Unilateral breastfeeding. Bate T (2007), Midwifery Matters no 112, Spring 2007, pp 8-9

Torbay is often praised for its high home birth rate and woman-centred care, but one thing we lack is a designated lactation consultant, or breastfeeding coordinator - someone with the time and energy (and remuneration!) to help us through the Baby Friendly Initiative hurdles. Failing this, we struggle to provide breastfeeding training for all the staff and to follow the WHO/UNICEF 'Ten Steps to Successful Breastfeeding'. Most midwives attending our breastfeeding training acknowledge that coverage of breastfeeding in our basic training was scant, and health visitors have had even less. When confronted with breastfeeding problems outside the normal range we have no expert to turn to for advice, so we rely on text books and reference materials like the comprehensive La Leche League Breastfeeding Answer Book (Mohrbacher and Stock 1997) - and we even resort to posting a query on the ukmidwifery mailing list. We also learn from reflecting on practice and experience and, of course, from the mothers themselves. (4 references) (Author)

20070220-2

Breastfeeding education and professional development in the North Trent Neonatal Network. Jackson A (2007), MIDIRS Midwifery Digest vol 17, no 1, March 2007, pp 90-93

The author, in her role as workforce development co-ordinator with the North Trent Neonatal Network, describes how she implemented breastfeeding training across the Network, covering nine units. The training was multidisciplinary so that all staff having contact with parents in their units would be fully able to help initiate and sustain breastfeeding. (14 references) (VDD)

20070220-1

Does breastfeeding really matter? A national multidisciplinary breastfeeding knowledge and skills assessment. McFadden A, Renfrew MJ, Wallace LM, et al (2007), MIDIRS Midwifery Digest vol 17, no 1, March 2007, pp 85-88

In spite of proven health benefits of breastfeeding, breastfeeding rates among women from disadvantaged groups remain low and questions have been raised about the ability of health professionals to meet the needs of breastfeeding women in the UK. To provide a comprehensive picture of the learning needs of key practitioners involved in supporting breastfeeding women, and the extent of existing training opportunities and resources, a national needs assessment was carried out, using a systematic and multi-method approach. Mixed quantitative and qualitative methods were used, including a national survey of 752 health practitioners, a survey of 19 national stakeholder organisations, case studies of 31 staff in three health economies in areas of social deprivation, and a review of accredited training courses. Findings highlighted deficits in breastfeeding knowledge and skills and low levels of self-assessed competence. There was also a lack of knowledge of current national guidelines for breastfeeding. Recommendations include using a systematic approach to determine training needs and providing multi-disciplinary breastfeeding education across health economies. The findings of this learning needs assessment point to shortcomings in the education of health professionals. It is critical that this problem is addressed in the interest of meeting government targets for tackling health inequalities in England and Wales. (28 references) (Author)

20070207-5*

Dissonance and competing paradigms in midwives' experiences of breastfeeding. Battersby S (2006), Sheffield: Sheffield University 2006

Relatively few studies have looked at midwives' personal experiences of breastfeeding. This study explored the social

constructs that underpin midwives' knowledge and experiences of breastfeeding. The midwives' background and understanding of breastfeeding was studied separate to and alongside their professional and educational experiences. Midwives' feelings towards breastfeeding were placed within a wider social perspective by relating them to the personal experiences of non-midwife breastfeeding mothers. This exploratory research study utilised a Ground Theory approach and Personal Construct Theory. Phase 1 involved the in-depth interviews of 10 midwives. The survey construction for Phase 2 was grounded in the data from the first phase. 711 questionnaires where distributed to six maternity units and 410 were returned giving a response rate of 57.7%. In order to place the findings in a wider social perspective 37 non-midwife mothers were interviewed using a semi-structured format. Through the process of constant comparison the core category of dissonance emerged and the causal condition was identified as conflicting paradigms of breastfeeding. The key properties to emerge were the midwives' perceptions of breastfeeding and breastfeeding mothers, competing sources for acquisition of knowledge, conflicts and dilemmas in professional practice and personal experiences of breastfeeding, and breastfeeding as a source of opposing emotions. Many of the sources of dissonance were also evident in the non-midwife mothers' narratives, except for the professional dimension of knowledge and experience. Midwives' personal experiences of breastfeeding were as diverse as those of non-midwife mothers, but a far higher number of midwives found breastfeeding enjoyable and pleasurable. Despite this, feelings of failure and guilt were prominent in both midwives' and mothers' narratives. Midwives' personal experiences, both positive and negative, had consequences for their professional practice and mothers in their care. Breastfeeding was clearly identified as a source of emotional labour and midwives had developed a variety of coping strategies. Recommendations are made for:- midwives to review their personal experiences of breastfeeding and to reflect upon their emotional responses to supporting and assisting breastfeeding mothers; midwives to recognise the diversity and idiosyncrasy of the breastfeeding experience; a convergence of different ways of knowing and for different levels of breastfeeding knowledge to be accepted as legitimate. (Author)

20061201-2*

Differences in perception of the WHO International Code of Marketing of Breast Milk Substitutes between pediatricians and obstetricians in Japan. Mizuno K, Miura F, Itabashi K, et al (2006), International Breastfeeding Journal vol 1, no 12, 22 August 2006. 5 pages

The World Health Organization International Code of Marketing of Breast-Milk Substitutes (WHO Code) aims to protect and promote breastfeeding. Japan ratified the WHO Code in 1994, but most hospitals in Japan continue to receive free supplies of infant formula and distribute discharge packs to new mothers provided by infant formula companies. The aim of this study was to explore the knowledge and attitudes of pediatricians and obstetricians in Japan to the WHO Code. Methods: A self-completion questionnaire was sent to 132 pediatricians in the 131 NICUs which belonged to the Neonatal Network of Japan, and to 96 chief obstetricians in the general hospitals in the Kanto area of Japan, in 2004. Results: Responses were received from 68% of pediatricians and 64% of obstetricians. Sixty-six percent of pediatricians agreed that 'Breastmilk is the best', compared to only 13% of obstetricians. Likewise, pediatricians were more likely to be familiar with the WHO Code (51%) than obstetricians (18%). Conclusion: In Japan, pediatricians and obstetricians, in general, have low levels of support for breastfeeding and low levels of familiarity with the WHO Code. To increase the breastfeeding rates in Japan, both pediatricians and obstetricians need increased knowledge about current infant feeding practices and increased awareness of international policies to promote breastfeeding. (The full text of this article can be accessed at: http://www.internationalbreastfeedingjournal.com/content/1/1/12) (9 references) (Author)

20061011-3

Addressing the learning deficit in breastfeeding: strategies for change. Renfrew MJ, McFadden A, Dykes F, et al (2006), Maternal & Child Nutrition vol 2, no 4, October 2006, pp 239-244

This paper summarizes the findings of the learning needs assessment described in this issue. Limitations and strengths are discussed. The paper describes a national, multi-sectoral, multi-disciplinary picture. Our respondents may over-represent those with an interest in breastfeeding; if so, the true picture may be even more problematic than described here. Major deficits were identified in the knowledge and skills of practitioners from all backgrounds and all sectors. Many professionals report poor knowledge about breastfeeding and have low levels of confidence and clinical competence. Organizational constraints and barriers to effective education and practice include fragmentation of care and education, lack of facilities, and a low priority being given to breastfeeding. There is a range of current educational provision, although not all is fit for purpose. Voluntary organizations seem to have higher standards than do some current professional learning opportunities. Preferred methods of training include practical observation and mentorship, volunteer counsellor involvement in training programmes, as well as self-study and online opportunities. Recommendations include: a funded, mandatory, inter-agency and multidisciplinary approach; appropriate content;

support at local and national levels; breastfeeding education to be included in clinical governance and audit mechanisms; and further research and evaluation to examine optimum ways of providing education and training. Organizational barriers could be addressed through a public health policy and evidence-based approach. (12 references) (Author)

20061011-2

'Informal' learning to support breastfeeding: local problems and opportunities. Abbott S, Renfrew MJ, McFadden A (2006), Maternal & Child Nutrition vol 2, no 4, October 2006, pp 232-238

This study explored 'informal' learning opportunities in three health economies, both for National Health Service (NHS) staff and lay people wishing to promote and support breastfeeding and for new mothers wishing to breastfeed. The word 'informal' indicates local learning opportunities that are not part of recognized academic or professional training courses. Semi-structured telephone interviews were conducted with 31 key informants, including heath visitors, midwives, infant feeding advisers, Sure Start personnel, voluntary organization representatives, Strategic Health Authority representatives, senior nurses and trainers. The results were analysed thematically. In each site, there were regular training events for NHS staff to acquire or update knowledge and skills. Training was provided by a small number of enthusiasts. Midwives and health visitors were the groups who attend most frequently, although many find it difficult to make time. Although many training events were multidisciplinary, few doctors appeared to attend. Individual staff also used additional learning opportunities, e.g. other courses, conferences, web-based learning, and training by voluntary organizations. Services offered to lay people by the NHS, Sure Start and voluntary organizations included parentcraft, antenatal and post-natal classes, breastfeeding support groups, 'baby cafes' and telephone counselling. Interviewees' organizations did not have a specific breastfeeding strategy, although action groups were trying to take the agenda forward. Local opportunities were over-dependent on individual champions working in relative isolation, and support is needed from local health economies for the facilitation of coordination and networking. (11 references) (Author)

20061011-1

A training needs survey of doctors' breastfeeding support skills in England. Wallace LM, Kosmala-Anderson J (2006), Maternal & Child Nutrition vol 2, no 4, October 2006, pp 217-231

The study examined the training needs of paediatricians and general practitioners (GPs). Respondents rated their competence on 23 breastfeeding support skills, importance of update in the next 2 years, actual and potential helpfulness of different forms of professional updates, and accessibility in the next 2 years. The perception of organizational barriers to breastfeeding support and practitioners' knowledge of policies and guidance on breastfeeding were also examined. The sample comprised 120 paediatricians and 57 GPs. Response rates were estimated as between 4% and 29%, depending upon the method of recruitment. Although both groups rated themselves as fairly competent in most of the skill areas, they welcomed training in key areas of practice. Paediatricians identified more areas for update than GPs ($t = 3.44$; d.f. = 178; $P < 0.00001$). Those who believed that they were less competent in clinical skills were least likely to seek update ($r = 0.35$; $P < 0.00001$). Practical forms of training were most often welcomed. Only 47% of GPs and 62.5% of paediatricians had access to a local breastfeeding policy. There were evident gaps in knowledge on key aspects of public health policy, which could influence local practice; for example, 50.8% of GPs and 47.5% of paediatricians identified a younger age for introducing solids than the minium according to current government guidance. Organizational barriers to breastfeeding support were experienced by all respondents. Recommendations include purposively targeting training to those least likely to seek training, and developing effective self-study and observational methods of learning. All training should be evaluated and implemented alongside breastfeeding policies and clinical leadership to improve the practice of all healthcare practitioners. (9 references) (Author)

20061010-58

The education of health practitioners supporting breastfeeding women: time for critical reflection. Dykes F (2006), Maternal & Child Nutrition vol 2, no 4, October 2006, pp 204-216

The protection, promotion and support of breastfeeding has now become a major international priority as emphasized in the 'Global Strategy for Infant and Young Child Feeding'. Health practitioners, such as midwives, nurses and doctors, have a key role to play in providing support to breastfeeding women. This paper provides a critical discussion of educational requirements of health practitioners to equip them for their supportive role. The effective integration of embodied, vicarious, practice-based and theoretical knowledge requires opportunities for deep critical reflection. This approach should facilitate personal reflection and critical engagement with broader socio-political issues, thus

allowing for collective understandings and change. Practitioners also need to understand breastfeeding as a biopsychosocial process that is dynamic, relational and changes over time. Recommendations are outlined with regards to multidisciplinary undergraduate education; mentorship schemes with knowledgeable role models supporting student practitioners; involvement of voluntary and peer supporters; post-registration education; setting of national standards for breastfeeding education; tailored education for specific groups; designated funding; and involvement of breastfeeding specialists. (116 references) (Author)

20061010-57

Assessing learning needs for breastfeeding: setting the scene. McFadden A, Renfrew MJ, Dykes F, et al (2006), Maternal & Child Nutrition vol 2, no 4, October 2006, pp 196-203

Breastfeeding has a major contribution to make to public health, yet the UK, like many other developed countries, has low rates of breastfeeding. A contributing factor is that practitioners are ill-prepared to support breastfeeding women. There is a mismatch between the care professionals provide and the support women desire. A national breastfeeding learning needs assessment (LNA) was carried out in England to provide a comprehensive picture of professional and practitioner learning needs and existing training opportunities and resources. The LNA comprised five elements, and sought the views of service users through consumer organizations and voluntary breastfeeding supporters. Two elements of the LNA are reported here. A search of RDLearning, a web-based national resource, provided details of existing accredited corses in the UK for practitioners. Ten short courses provided by higher education institutions were identified, along with a range of courses offered by voluntary and other organizations, such as the National Childbirth Trust and UNICEF Baby Friendly Initiative. Second, an e-mail survey of 28 key stakeholder organizations was undertaken, with a response rate of 68% (n = 18). All but one acknowledged that their members could benefit from further breastfeeding knowledge and expertise and were supportive of a national breastfeeding education initiative. The most popular forms of education provision were workshops and seminars, online and written information. The topic considered most important for all practitioners was the health outcomes of breastfeeding. Other contributions which stakeholder organizations felt they could make were the provision of information resources and setting up specialist interest groups. (40 references) (Author)

20060808-47

Call to help educate GPs on breastfeeding. (2006), RCM Midwives vol 9, no 8, 2006, p 292

Reports that the National Childbirth Trust has asked midwives to support GPs in improving their knowledge of breastfeeding. (MB)

20060613-14

Barriers to breastfeeding: a qualitative study of the views of health professionals and lay counsellors. Tennant R, Wallace LM, Law S (2006), Community Practitioner vol 79, no 5, May 2006, pp 152-156

Increasing breastfeeding initiation rates is now a target for the NHS. The attitudes and beliefs of health professionals are known to influence mothers' decisions to breastfeed. This paper describes a small qualitative study of health visitors' (n = 7), midwives' (n = 3) and lay breastfeeding counsellors' (n = 2) views of obstacles to breastfeeding. Interviews showed that day-to-day practice is informed by training and personal experience with research evidence having a more limited influence. Health professionals may experience tensions between these influences on their practice. Practical problems in accessing training make it difficult for health professionals to stay up-to-date with new evidence. Information from the study was used to develop a self-study training workbook for local health professionals. (23 references) (Author)

20060605-13

An investigation of the field trip model as a method for teaching breastfeeding to pediatric residents. Bunik M, Gao D, Moore L (2006), Journal of Human Lactation vol 22, no 2, May 2006, pp 195-202

Pediatricians in training are underexposed to breastfeeding issues and as a result are not fully prepared to promote breastfeeding and support the breastfeeding mother. This study is a pre-post evaluation of the effectiveness of a pilot breastfeeding curriculum. Using the 'field trip model,' pediatric residents participated in 4 half-day teaching sessions at community sites, including a visit to a La Leche League home meeting, a Kaiser lactation consultant clinic, hospital-based lactation rounds, and a children's hospital-based referral clinic. The objective of this study was to evaluate the effectiveness of this curriculum using a modified version of a previously published questionnaire that assesses knowledge about (70 items), attitude toward (6 items), and experience with breastfeeding (11 items). Residents enrolled in the field trip model of breastfeeding instruction exhibited significant increases in attitude and

experience scores and self-reported high levels of satisfaction compared to controls. (34 references) (Author)

20060523-3*

Mother's experiences of feeding situations: an interview study. Bramhagen A, Axelsson I, Hallstrom I (2006), Journal of Clinical Nursing vol 15, no 1, January 2006, pp 29-34

AIM: The aim of the study was to describe parents' experiences concerning feeding situations and their contact with the nurse at the Child Health Service (CHS). BACKGROUND: Some of the most important tasks for the nurse at the CHS are to monitor growth, detect feeding difficulties and give advice concerning food intake and feeding practices. METHOD: Eighteen mothers differing in age, education, ethnicity and number of children and recruited from different CHS were interviewed. The narratives were transcribed verbatim and analysed by content analysis at manifest and latent levels. RESULT: All mothers' described that food and feeding were essential parts of their lives requiring a great deal of time and involvement. Two major categories of mothers' attitudes in feeding situations were identified - a flexible attitude and a controlling attitude. Mothers with a flexible attitude were sensitive to the child's signals and responded to them in order to obtain good communication. Mothers who expressed a need for control established rules and routines regarding the feeding situations. Mothers with a controlling attitude expressed receiving inadequate support from the nurse at the CHS. CONCLUSION AND CLINICAL IMPLICATION: This study shows that some mothers experience inadequate support from the nurse at the CHS. Knowledge about mothers' experiences of feeding situations and their different attitudes towards the child during feeding might improve the CHS nurses' knowledge and help them understand and more adequately support mothers who experience feeding difficulties. (Author)

20060510-40*

Baccalaureate nursing students' breastfeeding knowledge: a descriptive survey. Spear HJ (2006), Nurse Education Today vol 26, no 4, May 2006, pp 332-337

This descriptive survey study assessed the breastfeeding knowledge of junior and senior baccalaureate nursing students (N=80) who had successfully completed their obstetric nursing course. With a possible perfect knowledge score of 100, participants' scores ranged from 35 to 85 with a sample mean score of 60. Surprisingly, most (85%) did not know that breastfeeding is recommended for the first year of an infant's life, and only five participants knew the proper management of mastitis. Well over one third (41.3%) of the participants opposed breastfeeding in public. Findings reveal the need to strengthen both the didactic and clinical components of the obstetric course curriculum. The acquisition of breastfeeding knowledge at the student level will better equip novice nurses to provide more effective breastfeeding counsel and support for childbearing women and to promote the achievement of the breastfeeding objectives of both the United States and the World Health Organization. (Author)

20060405-15

The development and delivery of a practice-based breastfeeding education package for general practitioners in the UK. Burt S, Whitmore M, Vearncombe D, et al (2006), Maternal & Child Nutrition vol 2, no 2, April 2006, pp 91-102

Growing acceptance that measurable improvements in public health, particularly in lower-income groups, could be achieved by increasing the incidence of breastfeeding has focused attention on the current lack of educational provision in breastfeeding issues for many health professionals. An audit of general practitioners in one area of northern England revealed an interest in receiving breastfeeding training. Department of Health funding was obtained by the breastfeeding subgroup of the local Maternity Services Liaison Committee to develop, deliver and evaluate a practice-based educational session supplemented by a resource pack. Over a 12-month period, 22 practices received the session and the project was evaluated using an illuminative evaluation model. Response rates to two evaluation questionnaires of 81% (133/164) and 62.5% (65/104) were achieved and findings indicated high levels of satisfaction with the session and its accompanying resource pack. Qualitative data related to perceived influence on future practice were subjected to thematic network analysis and revealed four main (organizing) themes: the acquisition of greater knowledge, improved access to resources, a proactive approach to breastfeeding support and the creation of a breastfeeding-friendly environment. The illuminative evaluation also identified recurring issues that could impact on any attempt to replicate or adapt this project; these were the influence of personal breastfeeding experiences, the desire for greater interaction during the training session and the wider implications for practice education of multidisciplinary attendance. (30 references) (Author)

20060322-32

Infant feeding: more help, less moralising. Scowen P (2006), Journal of Family Health Care vol 16, no 1, 2006, p 6

Improve your knowledge about infant feeding as a whole, give better practical support to mothers who breast-feed, but don't marginalise parents who don't. A dogmatic 'one size fits all' approach to infant feeding is unhelpful and unrealistic. (3 references) (Author)

20060109-67*

Physicians ask for more problem-solving information to promote and support breastfeeding. Krogstrand KS, Parr K (2005), Journal of the American Dietetic Association vol 105, no 12, December 2005, pp 1943-1947

Physicians (n=262) were surveyed about their breastfeeding promotion practices, knowledge, and areas in which they need more information in order to be more influential with patients in the initiation and duration of the process. Over half (51%) reported no or limited education in breastfeeding, whereas only 9% reported adequate education. A knowledge assessment indicated almost half (42%) did not know certain viruses can be transmitted through breast milk. There were also mixed responses to the need for vitamin D supplementation. Promotion practices included most (82%) thinking the physician has a primary role in the feeding decision, and most did discuss the benefits with patients; however, only 54% would recommend breastfeeding to a patient who had decided to bottle-feed. Problem-solving was the main area physicians reported needing more education. Partnerships with dietetics professionals may fill the gaps in the support needed to increase rates of breastfeeding. (Author)

20050712-53

Protecting and promoting the breastfeeding partnership for children of all ages. Akre J (2005), Aroha vol 7, no 3, June 2005, pp 3-4

Reflections on public policy and fostering an enabling sociocultural environment. (Author)

20041207-27

Time to grow up. Walton G (2004), Practising Midwife vol 7, no 11, December 2004, pp 49-50

Midwives are failing to support women who bottlefeed because they want to be with the 'in crowd'. They should stop acting like teenagers. (Author)

20040429-23

Breastfeeding: barriers and breakthroughs. Carson C (2004), RCM Midwives Journal vol 7, no 5, May 2004, p 192

Christine Carson was instrumental in establishing the Infant Feeding Initiative in 1999. The results of this work, offer a unique insight into breastfeeding practice and an evidential resource to draw on. Here, she talks about government targets and what lessons can be learned. (Author)

20040422-59

Midwives' knowledge of newborn feeding ability and reported practice managing the first breastfeed. Cantrill R, Creedy D, Cooke M (2004), Breastfeeding Review vol 12, no 1, March 2004, pp 25-33

Continuous uninterrupted skin-to-skin contact is known to facilitate newborn transition to extrauterine life, the ability to actively find the nipple and establishment of effective breastfeeding but is not promoted consistently in practice. The Newborn Feeding Ability Questionnaire (NFAQ) was developed to measure midwives' knowledge and practice in supporting the first breastfeed. The NFAQ was administered to 3 500 midwives in Australia through a mailed survey. A response rate of 31.6% (n = 1 105) was achieved and the sample was representative of the national midwifery population for age, sex, education and experience. Mean total score for knowledge was 85.94 (range 40-110 out of 110, SD = 10.55) and mean practice score was 95.89 (range 57-117 out of 120, SD = 9.19). Knowledge of newborn feeding ability was consistently associated with best practice in managing the first breastfeed. Almost all midwives reported that skin-to-skin contact for newborn infants immediately after birth was important, but few understood the significance of `continuous uninterrupted' skin-to-skin contact to facilitate correct attachment and effective suckling. One-third reported separating mother and baby for routine interventions before allowing the opportunity to demonstrate pre-feeding behavior or actually breastfeed. Although midwives attempt to ensure the first breastfeed is facilitated soon after birth, the practice of continuous uninterrupted skin-to-skin contact seems poorly understood and not uniformly practised. Further research is needed to investigate how midwives teach mothers' positioning and attachment for the first breastfeed. Education of midwives so they can optimally facilitate the first breastfeed is required to improve breastfeeding initiation rates. (94 references) (Author)

20040108-14

Perceptions of the Breastfeeding Best Start project. Shaw R, Wallace L, Cook M, et al (2004), Practising Midwife vol 7, no 1, January 2004, pp 20-24

Describes the perceptions of midwives who participated in a randomised controlled trial (1, 2), which evaluated a protocol involving the provision of hands-off breastfeeding advice to women. The attitudes of participating midwives are grouped into the following themes: 'breast is best... but not when we're busy', 'give us more money', 'it's a cultural thing', and 'that's the message you need to take back to the government'. The results indicate that whilst midwives believe in the promotion of breastfeeding and want to provide adequate support and care for women choosing to breastfeed, government resources are not sufficient to make this a reality. 1. Inch S, Law S, Wallace L. Hands off! The breastfeeding Best Start project (1). Practising Midwife, vol 6, no 10, November 2003, pp 17-19. 2. Inch S, Law S, Wallace L. Hands off! The breastfeeding Best Start project (2). Practising Midwife, vol 6, no 11, December 2003, pp 24-25. (23 references) (SB)

20031209-51

You sure can tell. Spear HJ (2003), Birthkit no 40, Winter 2003, p 6

Discusses the need to ensure that obstetric nurses promote breastfeeding, particularly to first-time mothers. Draws on the experiences of the author's daughter, who was given conflicting advice and information by nurses while on the postnatal ward. Also stresses the importance of finding a paediatrician who supports breastfeeding and does not advise switching to formula at the first sign of feeding problems. (4 references) (MB)

20031204-45

An Australian study of midwives' breast-feeding knowledge. Cantrill RM, Creedy DK, Cooke M (2003), Midwifery vol 19, no 4, December 2003, pp 310-317

OBJECTIVE: to investigate midwives' breast-feeding knowledge, assess associations between knowledge and role, and report on the validity and reliability of the Breast-feeding Knowledge Questionnaire for the Australian context. DESIGN postal questionnaire. SETTING national Australia. PARTICIPANTS: midwives (n=3500) who are members of the Australian College of Midwives Inc ACMI). FINDINGS a response rate of 31% (n=1105) was obtained. Respondents were knowledgeable of the benefits of breast feeding and common management issues. Key areas requiring attention included management of low milk supply, immunological value of human milk, and management of a breast abscess during breast feeding. Participants over the age of 30, possessing IBCLC qualifications; having personal breast-feeding experience of more than three months; and more clinical experience achieved higher knowledge scores. Role perceptions were positive with 90% of midwives reporting being confident and effective in meeting the needs of breast-feeding women in the early postnatal period. Midwives' role perception contributed 39% of the variance in general breast-feeding knowledge scores and was a significant predictor of participants' breast-feeding knowledge. KEY CONCLUSIONS AND IMPLICATIONS FOR PRACTICE: the level of basic breast-feeding knowledge of Australian midwives was adequate but there are deficits in key areas. Knowledge variations by midwives may contribute to conflicting advice experienced by breast-feeding women. Further research is needed to investigate in-depth breast-feeding knowledge, breast-feeding promotion practices, and associations between knowledge and practice. (45 references) (Author)

20031114-28*

Effect of an educational intervention about breastfeeding on the knowledge, confidence, and behaviors of pediatric resident physicians. Hillenbrand KM, Larsen PG (2002), Pediatrics vol 110, no 5, November 2002

OBJECTIVE: Breastfeeding is the preferred nutrition for infants, but many pediatricians report inadequate training to advise mothers who breastfeed. This study was designed to examine the effect of an educational intervention on pediatric residents' knowledge about breastfeeding, their confidence in addressing lactation issues, and their management skills during clinical encounters with breastfeeding mothers. DESIGN: An interactive multimedia curricular intervention was designed for pediatric residents to increase their knowledge about common lactation issues. The residents completed questionnaires before and after the intervention to measure knowledge and confidence. Resident behaviors in the clinical setting were measured before and after the intervention using telephone surveys of breastfeeding mothers after a clinic visit with a pediatric resident. RESULTS: Forty-nine pediatric residents participated in the study. Mean knowledge scores increased from 69% before the intervention to 80% after the intervention. Significant increases in knowledge included advising mothers about low milk supply, mastitis, abscess, or using medication, and in recognizing the benefit of the decreased risk of maternal cancer. Management

skills with breastfeeding mothers and infants in the clinical setting improved significantly. Before the intervention residents performed an acceptable number of behaviors 22% of the time, while after the intervention their performance was acceptable 65% of the time. Particular behaviors that showed significant improvement after the intervention included discussing signs of breastfeeding adequacy with the mother and correct management of lactation problems. CONCLUSIONS: These results indicate that not only breastfeeding knowledge and confidence, but most importantly clinical behaviors of pediatric residents can be enhanced through innovative educational opportunities. Appropriate counseling for breastfeeding mothers by pediatricians might contribute to an increase in the duration of breastfeeding. (Only the abstract is published in the print journal. Full article available online at http://www.pediatrics.org/cgi/content/full/111/4/e59) (Author)

20031106-11

How midwives learn about breastfeeding. Cantrill RM, Creedy DK, Cooke M (2003), Australian Midwifery Journal vol 16, no 3, September 2003, pp 25-30

Little is known about how midwives learn about breastfeeding. This study asked midwives to identify breastfeeding information resources used and perceived value for their learning. A mail questionnaire was sent to midwives (n = 3500) through the Australian College of Midwives Inc. (ACMI). A response rate of 31.6% (n = 1,105) was obtained. On-the-job experience was the most common source accessed and continuing education the most valuable. Very few respondents (3.1% n = 34) acknowledged either their hospital or university midwifery education program as a valuable breastfeeding information source. There is scope for continuing education programs to address evidence-based lactation and infant feeding information. Midwifery curricula need to teach in-depth knowledge of human lactation and develop clinicians' skill base to assist breastfeeding women. The development of national standards for course accreditation on lactation and infant feeding by ACMI, Baby Friendly Hospital Initiative (BFHI) and Australian Breastfeeding Association (ABA) would be a useful quality measure. (34 references) (Author)

20030926-12*

Effect of an educational intervention about breastfeeding on the knowledge, confidence, and behaviors of pediatric resident physicians. Hillenbrand KM, Larsen PG (2002), Pediatrics vol 11, no 5, November 2002. 7 pages

OBJECTIVE: Breastfeeding is the preferred nutrition for infants, but many pediatricians report inadequate training to advise mothers who breastfeed. This study was designed to examine the effect of an educational intervention on pediatric residents' knowledge about breastfeeding, their confidence in addressing lactation issues, and their management skills during clinical encounters with breastfeeding mothers. DESIGN: An interactive multimedia curricular intervention was designed for pediatric residents to increase their knowledge about common lactation issues. The residents completed questionnaires before and after the intervention to measure knowledge and confidence. Resident behaviors in the clinical setting were measured before and after the intervention using telephone surveys of breastfeeding mothers after a clinic visit with a pediatric resident. RESULTS: Forty-nine pediatric residents participated in the study. Mean knowledge scores increased from 69% before the intervention to 80% after the intervention. Significant increases in knowledge included advising mothers about low milk supply, mastitis, abscess, or using medication, and in recognizing the benefit of the decreased risk of maternal cancer. Management skills with breastfeeding mothers and infants in the clinical setting improved significantly. Before the intervention residents performed an acceptable number of behaviors 22% of the time, while after the intervention their performance was acceptable 65% of the time. Particular behaviors that showed significant improvement after the intervention included discussing signs of breastfeeding adequacy with the mother and correct management of lactation problems. CONCLUSIONS: These results indicate that not only breastfeeding knowledge and confidence, but most importantly clinical behaviors of pediatric residents can be enhanced through innovative educational opportunities. Appropriate counseling for breastfeeding mothers by pediatricians might contribute to an increase in the duration of breastfeeding. (Only the abstract is published in the print journal. Full article available online at http://www.pediatrics.org/cgi/content/full/103/5/e59) (23 references) (Author)

20030925-22

The medication vs breastfeeding dilemma. Jones W, Brown D (2003), British Journal of Midwifery vol 11, no 9, September 2003, pp 550-555

The benefits of breastfeeding are well documented. As the proportion of women who initiate and sustain breastfeeding increases, the importance of the safety of drugs passing to babies through their mother's breast milk will increase. All health professionals need to be aware of the importance of considering whether a mother is breastfeeding before recommending medication. Texts with sufficient detail to enable quantitative data to be

evaluated on the risk:benefit ratio for individual mother:baby pairs are not currently readily available. The authors conducted research amongst cohorts of 1000 GPs, community pharmacists and mothers in a matched area by postal questionnaire, on the experiences of, and attitudes towards, medication during lactation. This article gives an outline of some of the research results, and examines the expressed needs of the three survey populations. (10 references) (Author)

20030819-16*

Thai nurses' beliefs about breastfeeding and postpartum practices. Kaewsarn P, Moyle W, Creedy D (2003), Journal of Clinical Nursing vol 12, no 4, July 2003, pp 467-475

Cultural beliefs are important determinants of health care behaviours. Nurses have an important influence on infant feeding decisions and maternal postpartum care, but little is known about the extent to which their practice is influenced by traditional beliefs and/or recent innovations driven by evidence-based research. The aim of this study was to investigate Thai nurses' traditional beliefs about breastfeeding and related postpartum care, and their impact on nursing practice. A survey of 372 nurses working in hospitals and health services in Ubon Ratchathani, Thailand was undertaken. Questionnaire items were developed from a review of the literature and exploratory interviews with Thai women. Descriptive statistics were used to represent the incidence of particular beliefs and behaviours. Chi-square analyses were conducted to determine relationships between demographic characteristics and traditional beliefs and practices. There were discrepancies between nurses' beliefs and contemporary evidence-based practices. Many nurses supported traditional Thai postpartum practices such as food restrictions and encouraging hot baths. Some traditional beliefs supported by nurses may be detrimental to women and babies such as 'lying by fire', discarding of colostrum, and giving boiled water to neonates. Only half the nurses reported that they encouraged mothers to breastfeed immediately following birth. The study was undertaken in the North-East of Thailand, where the population is known to have strong belief systems. Reliability and content validity of the tool would be enhanced through replication studies and qualitative investigations of other breastfeeding issues. There is a need for professional development strategies such as peer review and mentoring to address inadequate knowledge and outdated practices of some health professionals, as well as continuity of care models to assess quality care outcomes that are culturally appropriate. (Author)

20030815-16

Breastfeeding education, treatment, and referrals by female physicians. Arthur CR, Saenz R, Replogle WH (2003), Journal of Human Lactation vol 19, no 3, August 2003, pp 303-309

The female membership of the Mississippi State Medical Association and female physician employees of the Mississippi State Department of Health were surveyed (N = 350) to examine their practice-related decisions relative to breastfeeding; 215 (61%) responded to the survey. Discussion was commonly used for educating patients, with face-to-face demonstrations used by less than half of respondents. Female physicians with breastfeeding experience were more comfortable than others in treating sore nipples, plugged ducts, infected nipples, and inadequate infant weight gain. There was no difference in the proportion of physicians with and without breastfeeding experience who treated mastitis, low milk supply, and poor latch. The largest percentages of referrals to other providers were in response to infants' poor weight gain and poor latch; the fewest were for nipple infections. Seventy percent of the respondents were not taught lactation management in medical school or residency. Better education for physicians regarding lactation management is needed. (19 references) (Author)

20030812-39

DH issues new breastfeeding recommendation. (2003), RCM Midwives Journal vol 6, no 6, June 2003, p 236

The Department of Health has recommended that mothers breastfeed for the first six months of the infant's life. (Author)

20030728-2*

Personal breast-feeding behaviors of female physicians in Mississippi. Arthur CR, Saenz RB, Replogle WH (2003), Southern Medical Journal vol 96, no 2, February 2003, pp 130-135

BACKGROUND: In this study, we examined the personal breast-feeding behaviors of female physicians in Mississippi. METHOD: Two hundred fifteen of 350 female physicians responded to a survey inquiring of their personal breast-feeding behaviors. RESULTS: One hundred fifty-five mothers (74%) reported having biologic children, and 146 (94.2%) breast-fed at least 1 child. Approximately 21% of the responding mothers breast-fed their first-born children for at least 6 months. There was a positive relationship between the duration of breast-feeding of older children and

the breast-feeding duration for younger children. The major reasons for weaning were return to work, diminishing milk supply, and lack of time to pump breast milk. CONCLUSION: The breast-feeding initiation rates among female physicians surpassed those of women in the general population, yet duration rates were comparable. Their own breast-feeding success might enhance the potential of female physicians as advocates and sources of credible information regarding breast-feeding; however, physicians need to be better educated regarding the management of breast-feeding. (Author)

20030717-28*

Breastfeeding: a guide to action. (2002), Ministry of Health (New Zealand) November 2002. 30 pages

Report setting out the New Zealand Ministry of Health's action plan for improving the initiation and maintenance of breastfeeding throughout New Zealand during 2002-03. Available online from http://www.moh.govt.nz. (35 references) (Author, edited)

20030703-54

Barriers to and facilitators of breast-feeding for women who smoke. Benn C (2003), Midwifery News [New Zealand College of Midwives] Issue 28, March 2003, pp 20-22

Report of a collaborative randomised controlled trial conducted in the lower half of the North Island of New Zealand between 1999 and 2001 into the barriers to, and facilitators of breastfeeding for women who smoke. Midwives who provided primary maternity care to women during pregnancy, labour and birth and the postpartum period were randomised into one of the four groups of the study. One group provided smoking cessation education and support, a second breastfeeding education and support, a third provided a combination of the two foregoing interventions, and there was a control group where the midwives gave usual maternity care. Data about levels of support, smoking status and baby feeding intention and outcomes were collected from the midwife at 36 weeks gestation and at discharge. Data about smoking status and baby feeding were collected from the women by mailed questionnaires at 28 weeks gestation, six weeks and four months postpartum. The findings show that the midwife plays a very important role in providing breastfeeding education and advice for women who smoke. There are a number of barriers to, and facilitators of, breastfeeding that the midwife needs to take cognizance of as she works with women who smoke. The midwife may have an influence on some the factors but a complex interplay of the psychosocial factors is, in many instances, beyond the influence of the woman and the midwife and may have a strong effect particularly on the duration of breastfeeding. (Author, edited).

20030703-5

Do perceived attitudes of physicians and hospital staff affect breastfeeding decisions?. DiGirolamo AM, Grummer-Strawn LM, Fein SB (2003), Birth vol 30, no 2, June 2003, pp 94-100

BACKGROUND: In the United States, since a substantial percentage of mothers are not breastfeeding, research is needed to assess important influences on breastfeeding. The current study assessed the impact on breastfeeding of the perceived attitudes of health care providers about infant feeding. METHODS: A longitudinal mail survey (1993-1994) was administered to 1620 women prenatally through 12 months postpartum; the current study focused on the prenatal and neonatal periods (66% response rate). The outcome variable was failure to breastfeed beyond 6 weeks. Predictor variables were the mother's perceptions of her prenatal physician's and hospital staff's attitudes on infant feeding. Analysis controlled for mother's prenatal breastfeeding intentions, father's feeding preference, and demographic and psychosocial variables. RESULTS: Forty-one percent of the mothers were not breastfeeding at 6 weeks postpartum. Substantial percentages of mothers reported that physicians and hospital staff expressed a preference for breastfeeding (38% and 57%, respectively), or expressed no preference (61% and 42%, respectively), whereas few favored formula feeding. Adjusted analyses indicated that 'no preference' by hospital staff was a significant risk factor for failure to breastfeed beyond 6 weeks. 'No preference' by physicians did not significantly influence breastfeeding outcome in these analyses. Further analyses indicated that the effects of perceived hospital staff attitudes were only present for mothers who intended prenatally to breastfeed for 2 months or less. CONCLUSIONS: Many women did not report receiving positive breastfeeding messages from their health caregivers and hospital staff. A perceived neutral attitude from the hospital staff is related to not breastfeeding beyond 6 weeks, especially among mothers who prenatally intended to breastfeed for only a short time. (32 references) (Author)

20030422-41

Surprises in the 2003 edition of the breastfeeding answer book. Mohrbacher N (2003), Leaven vol 39, no 1, February-March 2003, pp 3-7

Account by the co-author of The Breastfeeding Answer Book, 3rd edition, 2003, on some of the surprising new content, including new support for the use of nipple shields; research into the efficacy of 'kangaroo mother care' for the care of premature infants in Zimbabwe; changes in information regarding latch-on and breast compression; current research into breastfeeding by HIV-positive women; and new designs of the breast anatomy. (31 references) (RM)

20030422-103

The effort to increase breast-feeding: Do obstetricians, in the forefront, need help?. Power ML, Locke E, Chapin J, et al (2003), Journal of Reproductive Medicine vol 48, no 2, February 2003, pp 72-78

OBJECTIVE: To assess the knowledge, training and attitudes of obstetricians concerning management of breast-feeding. STUDY DESIGN: A survey was sent to 1,200 fellows of the American College of Obstetricians and Gynecologists; 397 practicing obstetricians responded. RESULTS: Obstetricians who were satisfied with their patients' behavior (69.5%) estimated that on average > 70% of their patients planned to breast-feed, while those who were unsatisfied (21.4%) estimated that < 60% of their patients planned to breast-feed. African American race and eligibility for Medicaid both appear to predict low rates of breast-feeding among patients. Most physicians considered that they were very well qualified to treat mastitis, prescribe maternal medications and advise their patients regarding contraception. They were less certain of their qualifications regarding educating their patients about breast-feeding and aiding them in solving breast-feeding problems. Personal breast-feeding experience was a significant predictor of female physician confidence. Four of 10 physicians regarded their residency training as inadequate in terms of breast-feeding management. CONCLUSION: The perceptions of obstetricians regarding breast-feeding practices of their patients appear consistent with national surveys. Obstetricians consider counselling their patients and managing breast-feeding care to be important parts of their clinical responsibilities, but further training and educational materials are warranted. (10 references) (Author)

20030415-106

ABM protocols: peripartum breastfeeding management for the healthy mother and infant at term. Chantry CJ, Howard CR, McCoy RC (2003), ABM [Association of Breastfeeding Mothers] vol 9, no 1, 2003, pp 2, 6-7

Text of the Academy of Breastfeeding Medicine (ABM) clinical protocol on peripartum breastfeeding management, including recommendations on the provision prenatal education about breastfeeding; the continuous presence of a doula throughout labour to enhance breastfeeding initiation; giving the infant to the mother for skin-to-skin contact and latching to the breast as early as possible after birth; and the use of lactation consultant to help mothers with breastfeeding problems. (29 references) (RM)

20030313-3

Evaluation of a training program for healthcare professionals about breast-feeding. Durand M, Labarere J, Brunet E, et al (2003), European Journal of Obstetrics & Gynecology and Reproductive Biology vol 106, no 2, 10 February 2003, pp 134-138

Objective: To assess the impact of a continuing medical education program based on the WHO's 10 steps to successful breast-feeding. Study design: An observational before-and-after study at a teaching hospital. Data for two random samples of 50 women before and 50 after the intervention were collected from medical records and completed by a mail questionnaire. Results: Seventy-six percent of mothers initiated breast-feeding in the two samples. The median duration of breast-feeding was 12 weeks and did not differ between the before and after groups. The percentage of newborns separated from their mother more than 4 h at night decreased substantially after the intervention (13% versus 52% before the intervention, $P < 0.01$). In-hospital formula provision also decreased after the intervention (63% of newborns versus 82% before intervention, $P = 0.07$). Conclusion: This pilot study has enabled authors to document the feasibility of evaluating the impact of continuing education of maternity ward staff. (20 references) (Author)

20021122-43

Midwives' embodied knowledge of breastfeeding. Battersby S (2002), MIDIRS Midwifery Digest vol 12, no 4, December 2002, pp 523-526

Midwives gain their knowledge of breastfeeding from a variety of sources. Part of this knowledge is empirical, gained through educational sources but many midwives will also have embodied knowledge gained through their personal experiences of breastfeeding. Both types of knowledge can influence how they respond and care for women but embodied knowledge is often perceived as subjective and inferior. The aim of this descriptive exploratory study was to explore midwives' personal experiences of breastfeeding and the impact they may have on professional practice. Midwives at six maternity units were surveyed and there was a response rate of 57.7%. There were 307 midwives who had personal experience of breastfeeding. The findings demonstrated that midwives' experiences of breastfeeding

are not unlike those of the women for whom they care. Many commence breastfeeding, find it problematic and discontinue it for the same reasons as non-midwife mothers. The comments made by midwives were illuminating. Some of them found that their own experiences of breastfeeding assisted them in their practice whilst others had found it caused difficulties. A major consideration from the study is that midwives may need to review their own breastfeeding experiences prior to assisting breastfeeding mothers. (12 references) (Author)

20021029-65

Exploring inconsistent breastfeeding advice: 2. Simmons V (2002), British Journal of Midwifery vol 10, no 10, October 2002, p 616-619

Inconsistent breastfeeding advice and support has been linked to the early cessation of breastfeeding (Rajan 1993, Department of Health, 1988). The available literature fails to explain why inconsistent advice exists, or why this problem has developed and persists. The ability to understand why healthcare professionals (HCPs) give the advice they do is central to understanding the perpetuation of variations in breastfeeding advice. This article is drawn from a qualitative study that involved interviewing midwives, health visitors and mothers who were or had breastfed within a trust in the north of England. Data were analysed and three main themes emerged. Conflicting advice is shown to have a detrimental effect on mothers who choose to breastfeed, inconsistency is mostly evident as inaccurate information and the authoritarian way that HCPs communicate to women appears to worsen the inconsistencies that exist. (13 references) (Author)

20020923-22

Education and change. Cadwell K (2000), In: Walker M. Core curriculum for lactation consultant practice. Sudbury: James and Bartlett 2002, pp 618-623

Chapter in which the author lists resources for professional education and change in lactation (27 references) (MS)

20020718-22

'We were starving him into submission to the breast'. Birkett D (2002), The Guardian 16 May, 2002, 1 page

Women who choose the bottle should not be stigmatised, argues Dea Birkett. (Author)

20020607-2

Breastfeeding and healthcare professionals: a review of knowledge, attitudes, and experience towards breastfeeding. Sharret-Stevens B (2002), International Journal of Childbirth Education vol 17, no 1, March 2002, pp 4-5

Breastmilk is the best and most complete source of nutrition available for the developing infant. Scientific evidence has supported innumerable benefits of breastfeeding for both mother and infant. Healthcare professionals play an important role in breastfeeding promotion and breastfeeding education. This article is a synthesis of healthcare professionals' attitudes knowledge, and experience regarding breastfeeding and breastfeeding practices. (14 references) (Author, edited)

20010324-41

Breastfeeding education of pediatric residents: a national survey. Eden AN, Mir MA (2000), Archives of Pediatrics and Adolescent Medicine vol 154, no 12, December 2000, pp 1271-1272

Brief details of, and results from, a survey to determine the current level and quality of breastfeeding education among paediatricians in the United States. (14 references) (MS)

20010311-09

Breast-feeding: continuing professional development. Jack CM, Wilson JE, Winder V, et al (2001), British Journal of Midwifery vol 9, no 3, March 2001, pp 162-166

Despite the numerous potential benefits to mother and infant, there has been little increase in the rates of initiation and duration of breast-feeding in the last decade. Continuing professional education for midwives, health visitors and nurses is an important factor in improving this situation. This paper discusses a collaborative educational breast-feeding initiative. This was designed to promote reflective and evidence-based practice with emphasis placed on the central importance of effective interpersonal skills in interactions with breast-feeding mothers. (35 references) (Author)

20010207-28

Assisting women to establish breastfeeding: exploring midwives' practices. Henderson AM, Pincombe J, Stamp GE (2000), Breastfeeding Review vol 8, no 3, November 2000, pp 11-17

Breastfeeding is recognised by many mothers, families and health professionals to be important for the health and wellbeing of mothers and babies. Successful breastfeeding depends on the acquisition of basic skills, accurate information and practice, and is strongly influenced by the support provided following childbirth. Midwives' practices may therefore have the potential to influence breastfeeding outcomes. Correct positioning and attachment of the newborn at the breast is a crucial component of the successful establishment of breastfeeding. A literature review revealed that minimal research exists on the practices that midwives use when assisting women to initiate breastfeeding. A series of focus group interviews were therefore conducted to stimulate in-depth exploration of midwives' understanding and practices in the positioning and attachment of a newborn infant at the breast. Eighteen midwives, each of whom had worked at least 12 months in the postnatal environment of a large metropolitan hospital in Adelaide, participated in the focus group discussions. Using thematic analysis, the following broad themes emerged from discussions - education, problem-solving, support, midwives' views about breastfeeding and influences on midwives' practice. These themes identify the roles and practices that midwives take on when assisting women to establish breastfeeding following childbirth, and also raise awareness of influences on their practice. (44 references) (Author)

20010202-08

Does breastfeeding education affect nursing staff beliefs, exclusive breastfeeding rates, and Baby-Friendly Hospital Initiative compliance? The experience of a small, rural Canadian hospital. Martens PJ (2000), Journal of Human Lactation vol 16, no 4, November 2000, pp 309-318

The effectiveness of a breastfeeding education intervention consisting of a 1 and a half-hour mandated session for all nursing staff, with an optional self-paced tutorial, was evaluated in a small rural Canadian hospital. The intervention was designed to increase exclusive breastfeeding rates, create positive beliefs and attitudes among staff members, and increase compliance with the World Health Organization/UNICEF Baby-Friendly Hospital Initiative (BFHI). Staff surveys and chart audits were conducted at both the intervention and control site hospitals prior to the intervention and 7 months after the intervention. Over a 7-month period, the intervention hospital experienced an increase in BFHI compliance (24.4 vs. 31.9, P<.0 1), breastfeeding beliefs (55.0 vs. 58.8, P<.05), and exclusive breastfeeding rates (31% vs. 54% of breastfed babies, P<.05) but no change in breastfeeding attitudes (44.0 vs. 44.9, P=.80). The control site experienced no change in BFHI compliance, beliefs, or attitudes but a significant decrease in exclusive breastfeeding rates (43% vs. 0%, P<.05).(29 references) (Author)

20010202-01

Continuing lactation education for physicians: is it time to rethink the process?. Heinig J (2000), Journal of Human Lactation vol 16, no 4, November 2000, pp 277-278

Discussion of how lactation professionals, public health advocates and government agencies can best provide physicians with continuing education to help them provide evidence-based, effective information to support breastfeeding women. (13 references) (KL)

20001120-10

Pediatrician's practices and attitudes regarding breastfeeding promotion. Schanler RJ, O'Connor KG, Lawrence RA (1999), Pediatrics vol 103, no 3, March 1999. 5 pages

Objective. Public awareness of the benefits of breastfeeding is expected to increase during and after the national, federally funded Best Start Breastfeeding Promotion Campaign. It is anticipated that this will result in more breastfeeding-based interactions between families and pediatricians. The American Academy of Pediatrics conducted a survey of its members to identify their educational needs regarding breastfeeding to assist in the design of appropriate information programs. Method. An eight-page, self-administered questionnaire was sent to 1602 active Fellows of the American Academy of Pediatrics. Results. The response rate was 71%. Breastfeeding, as the exclusive feeding practice for the first month after birth, was recommended by only 65% of responding pediatricians, only 370% recommended breastfeeding for 1 year. A majority of pediatricians agreed with or had a neutral opinion about the statement that breastfeeding and formula-feeding are equally acceptable methods for feeding infants. Reasons given for not recommending breastfeeding included medical conditions with known treatments that did not preclude breastfeeding. The majority of pediatricians (72%) were unfamiliar with the contents of the Baby Friendly Hospital Initiative. The majority of pediatricians had not attended a presentation on breastfeeding management in the

previous 3 years; most said they wanted more education on breastfeeding management. Conclusion. Pediatricians have significant educational needs in the area of breastfeeding management. (Only the abstract is published in the print journal. Full article available online at www.pediatrics.org/cgi/content/full/103/3/e35 or from MIDIRS subject to usual copyright restrictions). (22 references) (Author)

20001112-02

Statistics: breastfeeding. King D (1999), International Journal of Childbirth Education vol 14, no 2, June 1999, pp 8-9

Briefly considers four research studies into breastfeeding. The studies looked at the benefits of breastmilk in a NICU, infant illness and feeding method used, health benefits for mother and infant, and whether or not some practitioners are adequately prepared to promote breastfeeding. (4 references) (JAL)

20001112-01

Health professionals and breastfeeding: why do they have so much trouble understanding?. Newman J (1999), International Journal of Childbirth Education vol 14, no 2, June 1999, pp 5-7

Does medical training, with its reliance on intervention and treatment to remedy problems which are seen as abnormal, serve to undermine the importance of breastfeeding, one of the most normal functions in the world. The author considers how this can be the case, and asks for improved awareness among parts of the medical establishment of the value of breastfeeding. (JAL)

20001008-22

WHO Technical Consultants' statement on the duration of exclusive breast feeding. Wrld Health Organization (2000), BMJ vol 321, no 7266, 14 October 2000, p 958

It is believed that there is now sufficient scientific and epidemiological evidence for the recommendations for exclusive breastfeeding to suggest six months as the ideal duration. This brief statement from the World Health Organization was submitted by an international committee on 17 March 2000. (JAL)

20000918-27

Knowledge and attitudes of pediatric office nursing staff about breastfeeding. Register N, Eren M, Lowdermilk D, et al (2000), Journal of Human Lactation vol 16, no 3, August 2000, pp 210-215

This descriptive study documents nurses' breastfeeding knowledge and attitudes. The nursing staffs of 27 private pediatric practices in North Carolina were surveyed. The 42-item questionnaire included questions about who was responsible for breastfeeding support, what staff nurses knew and believed about breastfeeding, and where their breastfeeding education was obtained. The response rate was 59% (134 out of 227). Only 5% responded that a breastfeeding patient experiencing problems would be referred to a physician, whereas 81 % selected a lactation consultant, and 38% selected a member of the nursing staff. Knowledge scores ranged from 19 to 33 (out of 33). Attitude scores ranged from 10 to 30 (out of 30). Only 46% of respondents reported having received breastfeeding education in their training programs; 85% had received on-the-job training. The nurses surveyed were involved in breastfeeding support, yet many had incorrect information and negative attitudes toward breastfeeding. (22 references) (Author)

20000918-26

Nurses' attitudes, subjective norms, and behavioral intentions toward support of breastfeeding mothers. Bernaix LW (2000), Journal of Human Lactation vol 16, no 3, August 2000, pp 201-209

Fifty maternal-newborn nurses and 136 breastfeeding mothers participated in a prospective study designed to identify characteristics of nurses and external factors that influence nurses' ability to provide effective informational, technical, and emotional support to breastfeeding mothers and their infants. Ajzen and Fishbein's theory of reasoned action guided the study. Using questionnaire data, multiple regression analyses revealed that the nurses' supportive behavior was best predicted by their breastfeeding knowledge and attitudes. The nurses' intentions to provide support did not influence their actual behavior. Breastfeeding knowledge deficits also were identified. Because breastfeeding knowledge is predictive of nurses' supportive behavior, that knowledge must be accurate and complete to promote breastfeeding success and be considered helpful by the mother. (36 references) (Author)

20000913-05

An evaluation of skills acquisition on the WHO/UNICEF Breastfeeding Management Course using the pre-validated Breastfeeding Support Skills Tool (BeSST). Moran VH, Bramwell R, Dykes F, et al (2000), Midwifery vol 16, no 3, September 2000, pp 197-203

Objective: to test the hypothesis that midwives who had completed the 20 -hour WHO/ UNICEF Breastfeeding Management Course would score significantly higher on a validated, quantitative measure of breast-feeding support skills, the Breastfeeding Support(Skills Tool (BeSST), than a control group of midwives who had not undertaken the course. Design: breast feeding support skills were assessed using a between- subjects design conducted in midwives who had not attended the course and at two weeks following the hour course. Participants and setting: two groups, consisting of 13 pre- and 15 post-course midwives, we compared. The research was carried out at four hospital sites in the UK, three of which h; undertaken the 20 hour course and one which had not adopted the course. Findings: scores on the BeSST were significantly higher in the post-course group (mean 29.9) than in the pre-course group (mean = 19.8), t (23.39) = 2.94, P< 0.01. Key conclusions: it is clear that breast-feeding support skills, as demonstrated by the BeSST are significantly improved two weeks following the 20 -hour WHO/UNICEF Breastfeeding Management Course. Implications for practice: by demonstrating the effectiveness of the 20 -hour course in teaching breast-feeding support skills, additional hospitals may be encouraged to adopt the course and thereby contribute further to the advancement of optimum breast-feeding practices. Furthermore, this approach to assessment may be transferred to other areas of midwifery practice enabling the effective evaluation of courses and assessment of student learning. (22 references) (Author)

20000903-42

The development and validation of the Breastfeeding Support Skills Tool (BeSST). Moran VH, Dinwoodie K, Bramwell R, et al (1999), Clinical Effectiveness in Nursing vol 3, part 4, 1999, pp 151-155

Objective: to develop and validate a reliable tool which will effectively assess clinical skills in relation to breast feeding. Design: the development of the tool followed progressive stages, generating a pool of questionnaire items and then subjecting them to a series of rigorous tests of reliability and validity, in order to produce a tested tool. Setting: the North of England. Participants: the following groups were recruited for the validation process: 32 breastfeeding experts; 31 working midwives with no specific expertise in breast feeding; and 22 first-year pre-registration student midwives with little or no professional experience in this area. Measures: the tool consisted of video footage and a pen and paper questionnaire with both open and closed questions which were then scored numerically. Results: the final validated tool consisted of video footage and 30 items (20 open and 10 closed). All open items showed high inter-rater reliability (k >/= 0.6). All items produced a good spread of scores and were able to distinguish significantly between level of expertise (P< 0.05). The final tool showed good internal reliability (alpha = 0.89). Conclusions: The Breastfeeding Support Skills Tool developed has demonstrated reliability and validity. (22 references) (Author)

20000901-04

Early training for doctors critical for task of helping mothers in need. Naylor AJ (2000), BFHI [Baby Friendly Hospital Initiative] News May/June 2000, pp 2-3

Interview with an American paediatirican who co-founded Wellstart International, a lactation programme to promote good health during pregnancy and infancy by educating health professionals on lactation issues. (MS)

20000816-46

Assessment of breastfeeding knowledge of nurse practitioners and nurse-midwives. Hellings P, Howe C (2000), Journal of Midwifery & Women's Health vol 45, no 3, May/June 2000, pp 264-270

The purpose of this study was to replicate a national study of physician knowledge, experience, and attitudes about breastfeeding. All family, pediatric, and women's health care nurse practitioners and nurse-midwives in a northwestern state were surveyed using a mail questionnaire: the response rate was 60.4%. Respondents were nearly unanimous in believing that 'breast is best' and in recommending breastfeeding to expectant mothers as a part of their role. In general, 70% of respondents considered themselves effective or very effective in meeting the needs of breastfeeding patients. Although respondents were very supportive of breastfeeding, they were less knowledgeable about specific management strategies. There were differences in attitudes among nursing specialities and with years of experience. Overall, this statewide sample of nurse practitioners and nurse-midwives had a better understanding of the benefits of breastfeeding and an increased sense of effectiveness in managing breastfeeding problems than the physician participants in the national study. A national sample of nurse practitioners and nurse-midwives is needed to verify and expand on the results from this single jurisdiction, where 40% of the respondents were graduates of the

home institution of the co-investigators. (8 references) (Author)

20000514-12$

Why we recommend... Practical education for all health care professionals. (2000), Baby Friendly News no 5, March 2000, p 3

The majority of health professional in the UK have little formal breastfeeding education. The Baby Friendly Initiative recommends that all staff who have responsibility for caring for breastfeeding mothers receive formal training with an emphasis on practical skills and understanding. (3 references) (JAL)

20000401-36$

Working with your child's doctor. Berry J (1999), New Beginnings vol 16, no 6, November-December 1999, pp 196-199

Research has shown that the breastfeeding advice given by doctors varies significantly from the recommendations of the American Academy of Pediatrics (AAP). For example, the AAP recommends exclusive breastfeeding for the first six months, but only 65% of respondents said this was their policy. In the light of these results the author suggests ways of ensuring that a woman who intends to breastfeed is able to choose a suitably helpful and sympathetic caregiver. (5 references) (JAL)

20000305-30

Resident physicians' knowledge of breastfeeding and infant growth. Guise JM, Freed G (2000), Birth vol 27, no 1, March 2000, pp 49-53

Background: It is well documented that breastfed infants grow differently from formula-fed infants. The purpose of this study was to assess resident physicians' knowledge of breastfeeding and infant growth. Methods: A cross-sectional, self-administered survey was administered to family medicine and pediatric resident physicians from three large, hospital-based public and private programs in North Carolina. Results: One hundred and seven (46%) of 235 residents completed the study, representing 55 percent of family medicine residents and 39 percent of pediatric residents. Ninety-nine percent of participants reported frequently or always plotting infant growth at well-child visits. None reported plotting breastfed babies on a chart specific to breastfeeding. Only 5 percent of participants knew that breastfed infants grew at a slower velocity than formula-fed infants after 4 months of age. This knowledge was not significantly related to specialty, year of training, or gender; it was significantly related to breastfeeding experience ($p < 0.04$). Of the residents who did not have personal experience with breastfeeding, 99 percent answered incorrectly compared with 88 percent of those who had some personal experience in breastfeeding. Conclusions: In this sample of family medicine and pediatric residents, almost all were unaware that breastfed infants grow at slower rates after 4 months of age. Since the frequency of breastfeeding is increasing in the United States, it is important that physicians be able to monitor the growth of breastfed infants accurately and provide expert counseling for breastfeeding mothers. (39 references) (Author)
