WABA Research Task Force (RTF)

e-newsletter

August 2011 issue

Contents

From the Editors

This issue

We are pleased to share with you the third issue of the WABA Research Task Force (RTF) E-newsletter. This issue focuses mainly on a few aspects of clinical breastfeeding and some of the determinants of breastfeeding behaviour. Hepatitis B in breastfeeding mothers is a hot topic for discussion as well as issues related to diarrhoeal morbidity and mortality. The issue also deals with the main determinants of exclusive breastfeeding in a few selected countries and how self confidence in breastfeeding can be improved among trained health workers. Finally we present an article that describes the profiles of working mothers who practice exclusive breastfeeding in Indonesia.

About the newsletter

There is an abundance of research and much of this can be accessed through journals and databases such as Medline. This newsletter aims to present some of this emerging research in a comprehensive and easy-to-read format. For each issue, we will choose a few current topics where we ask key researchers/programme experts to summarise the latest research and explain how these findings can be applied in the real world.

You will also find abstracts and commentaries on a few research studies and the links to the full text articles for further reading. We hope that this newsletter will enhance your work, whether programme, clinical or advocacy, as well as stimulate discussion about research findings, methodologies and ethics. Your comments on the current topics and articles are most welcome! If you have any suggestions for future topics, please let us know.

The newsletter will be issued three times a year.

Enjoy reading!

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Should chronic hepatitis B mothers breastfeed? A meta analysis

Yingjie Zheng, et al

The authors use a **meta-analytic technique** to quantify the evidence of an association between breastfeeding and risk of chronic hepatitis B (CHB) infection among the infants vaccinated against HBV. The advantages of breastfeeding over formula feeding have been well documented. In the absence of evidence that breastfeeding poses any additional risk of infection to infants born of CHB mothers, World Health Organization (WHO) recommends breastfeeding even for area where HBV infection is highly endemic and HBV vaccine is not available. In the present paper, we conduct a meta analysis to assess the risk of CHB infection of vaccinated infants through breastfeeding associating with CHB mothers who are and are not positive for the HBV infectivity markers.

Methods

Criteria for inclusion of the studies

(1) Follow-up studies, prospective or retrospective, on the association between breastfeeding (BF) versus formula-feeding (FF) and risk of CHB infection among the infants born of CHB mothers.
(2) All infants must receive at least 3 doses of hepatitis B vaccines, with or without receiving hepatitis B immunoglobulin (HBIG) after birth.
(3) CHB infection is defined as the presence of any of the three HBV markers (HBsAg, HBeAg and HBV DNA) in blood, during prenatal care visit and / or before delivery of their babies for the mothers and within one year after immunization with the third-dose hepatitis B vaccine for the infants.

Data extraction

Two independent investigators (Xia and Yao) were involved in data extraction. The third investigator (Lu) examined the results, and a consensus was reached. The outcome, CHB infection of the infants born of CHB mothers at the end of follow-up within one year after immunization with the third-dose hepatitis B vaccine was considered. We extracted the following data from the eligible studies: authors' names, journal and year of publication, country of origin, enrolment periods, type of study, number of CHB and non-CHB among the infants by feeding methods, general characteristics of the babies and their mothers.

Statistical analysis

The risk difference (RD) with 95% confidence interval (CI) was used as a measure of effect between breastfeeding (BF) versus formula-feeding (FF) and risk of infantile used to pool the RDs across studies in Stata version 10.0 (Stata Corp). Heterogeneity was explored by x^2 test, with a significance set at a *P* value <0.10. The extent of heterogeneity was measured by Higgins' I2. Subgroup analysis and Meta-regression were carried out to examine the effect in relation to quality and type of study, language of paper, study sites, hepatitis B vaccination of the mothers and infants, and mothers' infectivity if available. We used the test for interaction to estimate the difference between two subgroups CHB infection across studies. The Dersimonian and Laird random-effects model was used to pool the RDs across studies

in Stata version 10.0 (Stata Corp). Heterogeneity was explored by x^2 test, with a significance set at a *P* value <0.10. The extent of heterogeneity was measured by Higgins' I2. Subgroup analysis and Meta-regression were carried out to examine the effect in relation to quality and type of study, language of paper, study sites, hepatitis B vaccination of the mothers and infants, and mothers' infectivity if available. We used the test for interaction to estimate the difference between two subgroups.

Results

The search retrieved 517 papers, and 99 out of which were potentially relevant to current analysis. Further backward search produced 3 additional papers. Only 32 papers [7, 10-13, 22-48] which offered 32 independent studies were included in our analysis and the reasons for exclusion of the others were listed in additional. The 32 studies included in present analysis were published between 1985 and 2010. One study was conducted in the United States, one in Italy and the other 30 in China, including Hongkong. Mothers decided the feeding methods in all studies except one in which they were randomized. The sample size of the studies ranged from 38 to 436 (median, 143), with the ratio of BF versus FF infants of 0.09 - 5.07 (median, 0.94). The 32 studies contributed 5650 infants and 244 CHB outcomes with an overall transmission rate of 4.32%. The difference between the risk of infantile CHB infection among BF and FF infants (RD) determined by the random-effects model was -0.8%, (95% confidence interval [CI]: -1.6%, 0.1%) and that determined by the fixed-effects model was -0.4% (95% CI: -1.6%, 0.7%). The findings suggest that BF is not associated with additional risk of infantile CHB infection concurred with that of all the individual studies, except one, which suggests that BF is associated with a lower risk than FF.

Data on HBV infectivity available from 16 of the 32 studies showed that 42.0% (1648/3924) of mothers were designated with "high infectivity", being positive for either the HBeAg and/or the HBV DNA, and that the proportion of these mothers was lower among those who elected to BF (36.9%, 739/2001) than those who elected to FF (44.1%, 812/1843) (Table 2). The overall RD was -0.4% (95% CI: -1.4%, 0.7%), which was not modified by language of paper, quality and type of study, study sites or infant-mother vaccination by both subgroup analysis and Meta regression. And the RD determined for mothers with high infectivity was 0.7% (95% CI: -2.0%, 3.5%), which was not significantly different (Z=0.789, *P*>0.05) from that determined for mothers with low infectivity, -0.5% (95% CI: -1.7%, 0.6%.

Publication bias and its correction

Visual inspection of the funnel plots demonstrated a possible publication bias. After trim and fill methods were performed, the pooled RDs were -1.0% (95%CI: -1.8%, - 0.1%) and -0.6% (95%CI: -1.6%, 0.5%) respectively for the 32 and 16 studies.

CONCLUSION

Our results suggest that breastfeeding by CHB mothers does not pose a significant risk of infection by the virus, provided that the infants have been vaccinated against HBV at birth. Even by mothers with high infectivity, is not associated with demonstrable risk of infection of infantile CHB. This may be partly because infection mainly occurs during delivery and the protection by vaccination. The finding concurs with that of individual studies and supports the WHO recommendation of BF, irrespective of the HBV status of the mothers. In our meta analysis, reference search, data extraction and quality evaluation were done by two independent investigators and examined by the third one before a consensus was reached, thus the completeness and appropriateness of the studies included for analysis were ensured. We used RD instead of OR or risk ratio (RR) as effect measure, which ensured that a reasonable estimation of effect measurement remained untouched and the 2nd shortcoming mentioned above was overcome simultaneously. Routine hepatitis B vaccination allows the infant to enjoy breastfeeding, the nutritional, immunological and psychological advantages of which are well known. And breastfeeding would also greatly benefit the mother, especially in weakening or eliminating her fear and guilt which occur often. Unfortunately, contrary to our findings that risk of breastfed transmission of infantile CHB infection simply does not exist, the current clinical practices seem discouraging: any breastfeeding rate is about 30% lower for those mothers with than without CHB, and even lower (5.4% only) for those with high infectivity; there is still 25% - 50% of the medical professionals did not recommend infantile breastfeeding by CHB mothers. Thus, health education of breastfeeding with correct knowledge, attitude and behaviour on the decision makers, such as medical professional and CHB mothers, seems to be urgent, especially in those epidemic countries, like China.

Article URL http://www.biomedcentral.com/1471-2458/11/502

Comments from the editor: *This meta analysis demonstrates no association between breastfeeding and risk ofinfantile CHB infection from a CHB mother to her infant. Large number of studies had concluded no risk of transmission of HBV by mothers with chronic Hepatitis B in continuing breastfeeding. In this meta-analysis majority of the studies are from China and recommends routine vaccination, it is a dilemma that still many health care professionals are not fully aware of this fact. There is great need to create awareness among medical professionals through trainings, workshops and seminars especially in the regions of high epidemic like China.*

Breastfeeding and the risk for diarrhea morbidity and mortality

Laura M Lamberti et al

Lack of exclusive breastfeeding among infants 0-5 months of age and no breastfeeding among children 6-23 months of age are associated with increased diarrhea morbidity and mortality. Studies show that human milk glycans, which include oligosaccharides in their free and conjugated forms, are part of a natural immunological mechanism that accounts for the way in which human milk protects breastfed infants against diarrheal disease. Breastfeeding reduces exposure to contaminated fluids and foods, and contributes to ensuring adequate nutrition and thus non-specific immunity. Diarrheal disease accounts for approximately 1.34 million deaths among children ages 0-59 months and continues to act as the second leading cause of death in this age group. This systematic review and meta-analyses use carefully developed and standardized methods to focus on the effects of breastfeeding practices as they relate to diarrhea incidence, prevalence, mortality and hospitalization among children 0-23 months of age. Here we present a comprehensive systematic review and meta-analysis as evidence to be utilized by the Lives Saved Tool (LiST) to model the effect of breastfeeding practices on diarrhea-specific morbidity and mortality.

Methods

All literature published from 1980 to 2009 systematically reviewed to identify studies with data assessing levels of suboptimal breastfeeding as a risk factor for diarrhea morbidity and mortality outcome. The studies included were randomized controlled trials (RCT), cohort and observational studies that assessed suboptimal breastfeeding as a risk factor for at least one of the following outcomes: diarrhea incidence, diarrhea prevalence, diarrhea mortality, all-cause mortality, and diarrhea hospitalizations. Included studies were published in any language from 1980 - 2009 and were conducted in developing countries with a target population of children 0-23 months of age. We excluded studies reporting diarrhea as a result of only one microbial cause, and those with unclear methodology or data in a form that could not be extracted for meta-analysis. We also excluded studies reporting exclusive breastfeeding for children beyond 6 months of age and those failing to restrict the allocation of diarrhea outcomes to concurrent breastfeeding status. Additionally, we excluded morbidity studies with diarrhea recall beyond two weeks and mortality studies where the removal of deaths occurring within the first three to seven days of life was not possible. For studies reporting outcomes stratified by HIV status, we only abstracted data on HIV-negative infants and children. We abstracted data for each diarrhea outcome by breastfeeding exposure levels. By current standards, 'exclusive breastfeeding' does not include the ingestion of anything other than breastmilk and prescribed vitamins and medications, and infants receiving non-nutritive liquids, such as waters and teas, are classified as 'predominantly breastfed'. In cases where relative risk (RR) was not reported, we generated RR and 95% confidence intervals using reported numerators and denominators.

We organized data into the following age strata: 0-28 days, 0-5 mos, 0-11 mos, 6-11 mos, 12-23 mos, and 6- 23 mos. We excluded studies with over arching age categories that could not be collapsed; however, we included one diarrhea mortality study grouping children 12-35 mos and applied its

RR to the 12-23 mos analysis. For infants aged 0-5 mos, we generated pooled effect measures using exclusive, predominant, and partial breastfeeding as reference categories. For infants in the 0-11 mos category, we used partial and any breastfeeding as reference categories, and for all age categories extending from 6 or 12 months, we used any breastfeeding as the only reference category. For each outcome of interest, we summarized the evidence by conducting an assessment of study quality and quantitative measures as per CHERG guidelines. As per the CHERG grading system, the overall quality of evidence for each effect estimate receives a score on a four point continuum ('high', 'moderate', 'low', 'very low'), which is then used to either support or oppose its inclusion in the LiST model. Although, it has been reported that self-selection or reverse causation can also create bias in the opposite direction, with some mothers less likely to wean sick children. These biases can be reduced by the following four methods: (1) exclusion of deaths or episodes occurring within the first 7 days of life; (2) exclusion of infants and young children from non-singleton and/or premature births and those with low birth weight, congenital abnormalities, and any other serious illnesses unrelated to the outcome of interest; (3) identification of breastfeeding exposure immediately prior to the onset of illness or mortality as opposed to that concurrent with outcome; (4) assessment of whether weaning was a direct consequence of illness or poor growth and exclusion of such infants or young children if their inclusion significantly changes the effect measure.

Results

The systematic literature review yielded 2375 unique publications, 71 of which contained data on suboptimal breastfeeding as a risk factor for the identified outcomes of interest. A total of 18 studies met all inclusion, exclusion, and analytical criteria and were included in the analysis. Of these, 11 were prospective cohort, 4 were cross-sectional observational, and 3 were case-control studies. The majority were conducted in Latin America (n=7) but also took place in Africa (n=4), South Asia (n=5), the Middle East (n=2) and the Western Pacific (n=2) regions, with one study reporting three different study locations.

Diarrhea incidence

Among infants 0-5 mos of age, predominant (RR: 1.26), partial (RR: 1.68) and not breastfeeding (RR: 2.65) resulted in an excess risk of incident diarrhea in comparison to exclusive breastfeeding. Similarly, the estimated relative risk of incident diarrhea was elevated when comparing not breastfed (RR: 1.32) to breastfed infants 6-11 mos of age. No studies reported diarrhea incidence comparing exclusive breastfeeding to suboptimal feeding among neonates.

Diarrhea prevalence

In comparison to exclusively breastfed infants 0-5 mos of age, the estimated relative risk of prevalent diarrhea was statistically significantly elevated in predominantly (RR: 2.15), partially (RR: 4.62), and not (RR: 4.90) breastfed infants. Among infants and young children 6-23 mos of age (Table 3), not

breastfeeding (RR: 2.07) resulted in an excess risk of prevalent diarrhea as compared to breastfeeding. There were no studies comparing diarrhea prevalence among exclusively and sub-optimally breastfed neonates.

Diarrhea mortality

In comparison to exclusive breastfeeding, predominant (RR: 2.28), partial (RR: 4.62) and not (RR: 10.52) breastfeeding led to an elevated risk of diarrhea mortality among infants 0-5 mos of age. Among infants 0-11 mos of age, the estimated risk of diarrhea mortality was higher in partially (RR:4.19) and not (RR: 11.73) breastfed infants as compared to those predominantly breastfed. For infants and young children 6-23 mos of age, not breastfeeding (RR: 2.18) resulted in an excess risk of diarrhea mortality as compared to breastfeeding. There were no studies comparing the outcome of diarrhea mortality in exclusively versus sub-optimally breastfed neonates.

All-cause mortality

As compared to exclusively breastfed infants 0-5 mos of age, the estimated relative risk of all-cause mortality was statistically significantly elevated among those predominantly (RR: 1.48), partially (RR: 2.84) and not (RR: 14.40) breastfed. The estimated relative risk of all-cause mortality was higher when comparing not breastfed (RR: 3.69) to breastfed infants and young children 6-23 mos of age. Among neonates, predominant (RR: 1.41), partial (RR: 2.96), and no (RR:1.75) breastfeeding resulted in elevated risk of mortality as compared to exclusive breastfeeding.

Diarrhea hospitalizations

The estimated relative risk of hospitalization for diarrhea illness was elevated among predominantly (RR: 2.28), partially (RR: 4.43) and not (RR: 19.48) breastfed infants 0-5 mos of age as compared to those exclusively breastfed . Among infants 6-11 mos of age, not breastfeeding continued to result in a higher risk of hospitalization for diarrhea when compared to any breastfeeding (RR: 6.05). There were no studies reporting diarrhea hospitalizations as an outcome for neonates.

CONCLUSION

In conclusion, this data confirm and highlight the importance of breastfeeding for the prevention of diarrhea morbidity and mortality. This review also provides updated risk estimates across age categories. Among infants 0-5 mos of age, these findings support the recommendation for exclusive breastfeeding during the first 6 months of life as a key child survival intervention. Furthermore, results among infants and children beyond the first 6 mos of age reveal the importance of continued breastfeeding as a critical intervention to protect against diarrhea-specific morbidity and mortality throughout the first two years of life. So there is a sizable body of evidence for the protective effects of breastfeeding against diarrhea incidence, prevalence, hospitalizations, diarrhea mortality, and all-cause mortality. The results of random

effects meta analyses of eighteen included studies indicated varying degrees of protection across levels of breastfeeding exposure. For all outcomes among infants 0-5 mos of age, the protection conferred by exclusive breastfeeding was incrementally greater than that granted by predominant and partial breastfeeding. The protection conferred by breastfeeding appears to operate via two pathways, decreasing diarrhea incidence as well as duration.

Article URL http://www.biomedcentral.com/1471-2458/11/S3/S15

Comments from the editor: *While the current analysis was limited by a lack of geographic variety by outcome, the geographic diversity of the overall analysis was actually quite wide with studies taking place in eleven unique countries and in all WHO regions except Europe.*

WHO and UNICEF currently recommend exclusive breastfeeding for the first 6 months of life with continued feeding through the first year among HIV positive mothers, provided that they or their infants receive ARV drugs during the breastfeeding period.

There is great need at national level to evaluate the breastfeeding promotion strategies or the operational challenges of inspiring mothers to commit to exclusive breastfeeding for the first 6 months and to continued breastfeeding for the following 18 months. Operations research is needed to identify methods for maximizing the effectiveness of breastfeeding promotion programs and policies on behaviour change among mothers. I would emphasise that health care professionals can play vital role in this regard.

Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries

Imdad A, Yakoob MY, Bhutta ZA. BMC Public Health. 2011 Apr 13;11 Suppl 3:S24.

Given the recognized benefits of breastfeeding for the health of the mother and infants, the World Health Organization (WHO) recommends exclusive breastfeeding (EBF) for the first six months of life. However, the prevalence of EBF is low globally in many of the developing and developed countries around the world. There is much interest in the effectiveness of breastfeeding promotion interventions on breastfeeding rates in early infancy. A systematic literature was conducted to identify all studies that evaluated the impact of breastfeeding promotional strategies on any breastfeeding and EBF rates at 4-6 weeks and at 6 months. Data were abstracted into a standard excel sheet by two authors. Meta-analyses were performed with different sub-group analyses. The overall evidence were graded according to the Child Health Epidemiology Reference Group (CHERG) rules using the adapted Grading of Recommendations, Assessment, Development and Evaluation (GRADE) criteria and recommendations made from developing country studies for inclusion into the Live Saved Tool (LiST) model. After reviewing 968 abstracts, 268 studies were selected for potential inclusion, of which 53 randomized and quasi-randomized controlled trials were selected for full abstraction. Thirty two studies gave the outcome of EBF at 4-6 weeks postpartum. There was a statistically significant 43% increase in this outcome, with 89% and 20% significant increases in developing and developed countries

respectively. Fifteen studies reported EBF outcomes at 6 months. There was an overall 137% increase, with a significant 6 times increase in EBF in developing countries, compared to 1.3 folds increase in developed country studies. Further sub-group analyses proved that prenatal counseling had a significant impact on breastfeeding outcomes at 4-6 weeks, while both prenatal and postnatal counseling were important for EBF at 6 months. Conclusion: Breastfeeding promotion interventions increased exclusive and any breastfeeding rates at 4-6 weeks and at 6 months. A relatively greater impact of these interventions was seen in developing countries with 1.89 and 6 folds increase in EBF rates at 4-6 weeks and at 6 months respectively.

Comments from the editor: *This review of all interventions to promote and support breastfeeding is an added value to an earlier Cochrane review on support interventions. It is interesting to note that breastfeeding promotion appears to be more effective in developing countries compared to developed countries. One explanation that the authors offer is that knowledge and support may not be the limiting factors in the developed countries, rather early employment, availability of formula and social factors. This review also supports breastfeeding interventions during pregnancy. However to achieve increases in exclusive breastfeeding we need to have a combination of prenatal and postnatal promotion. Interestingly, lay and professional support and education are needed, especially in settings where most deliveries take place in the home.*

Predictors of exclusive breastfeeding in early infancy: a survey report from Phnom Penh, Cambodia

Yuri Sasaki et al
Journal of Pediatric Nursing (2010) 25, 463–469

Exclusive breast-feeding (EBF) is recommended in the first 6 months of an infant's life. This study aims to investigate the present status of infant feeding practices and identify factors that affect EBF practices during the first 6 months following infant birth in Phnom Penh, Cambodia. A cross-sectional survey with a semi-structured questionnaire was given to 312 mothers with children aged 6 to 24 months who visited the immunization clinic in the National Maternal and Child Health Centre in Phnom Penh, Cambodia, from December 2005 to February 2006. Eighty-three percent of mothers fed breast milk exclusively in the first month, whereas only 51.3% continued EBF in the first 6 months. Within 30 minutes after delivery, 39% of mothers began breast-feeding. Results from logistic regression analysis indicate that the lack of a maternal antenatal EBF plan, working and lack of paternal attendance at breast-feeding classes have independently positive associations with cessation of EBF during the first 6 months of infant life. The findings have helped to identify some important factors affecting EBF practices in the study area in Cambodia. The findings revealed that it is important to educate pregnant mothers, probably through exposure to trained midwives and media, so they may recognize the significance of EBF and will develop intention and plan to feed their babies, keeping in mind the benefits it may yield. Paternal involvement in breast-feeding classes may increase their awareness and consequently complement EBF practices. Finally, development of conducive working environments and policies for working mothers should be carefully explored.

Comments from the editor: *Although this is a retrospective study with the usual limitations of recall bias which may affect the validity of the mothers' responses, it is interesting to note that the main independent factor for the duration of exclusive breastfeeding in this urban Cambodian context was lack of a maternal antenatal plan for exclusive breastfeeding. This is supported by other studies.In Phnom Penh the exclusive breastfeeding rate is much higher than in more rural parts of the country. This could be explained by the fact that almost 2/3 of babies were delivered in a Baby-Friendly Hospital thus increasing the chances of access to appropriate education by trained midwives. The authors stress the importance of influencing intentions and plans before delivery and including fathers in breastfeeding education.*

Determinants of exclusive breastfeeding in Nigeria

Agho et al
BMC Pregnancy and Childbirth
2011, 11:2

Exclusive breast feeding (EBF) has important protective effects on the survival of infants and decreases risk for many early-life diseases. The purpose of this study was to assess the factors associated with EBF in Nigeria. Data on 658 children less than 6 months of age were obtained from the Nigeria Demographic and Health Survey (NDHS) 2003. The 2003 NDHS was a multi-stage cluster sample survey of 7864 households. EBF rates were examined against a set of individual, household and community level variables using a backward stepwise multilevel logistic regression method.

The average EBF rate among infants younger than 6 months of age was 16.4% (95%CI: 12.6%-21.1%) but was only 7.1% in infants in their fifth month of age. After adjusting for potential confounders, multivariate analyses revealed that the odds of EBF were higher in rich households than poor households. Increasing infant age was associated with significantly less EBF. Mothers who had four or more antenatal visits were significantly more likely to engage in EBF (AOR = 2.70, 95%CI = 1.04-7.01). Female infants were more likely to be exclusively breastfed than male infants (AOR = 2.13, 95%CI = 1.03-4.39). Mothers who lived in the North Central geopolitical region were significantly more likely to exclusively breastfeed their babies than those mothers who lived in other geopolitical regions.

The EBF rate in Nigeria is low and falls well short of the expected levels needed to achieve a substantial reduction in child mortality. Antenatal care was strongly associated with an increased rate of EBF. Appropriate infant feeding practices are needed if Nigeria is to reach the child survival Millennium Development Goal of reducing infant mortality from about 100 deaths per 1000 live births to a target of 35 deaths per 1000 live births by the year 2015.

Comments from the editor: *This study is based on a nationally representative sample and uses the standard WHO definitions making comparison with other similar studies easier. Interestingly enough mothers from more privileged groups were more likely to exclusively breastfeed than those from lesser privileged groups, even though the level of exclusive breastfeeding is still far below that in Asian countries and actually declining in Nigeria*

as a whole. The authors suggest that a significant improvement could be achieved by targeting practices such giving water in addition to breastmilk and focusing on poor, illiterate families and those who deliver at home, not reached by antenatal and delivery services. Community-based peer counseling might be the most appropriate intervention in these cases.

The effects of Baby Friendly Initiative training on breastfeeding rates and the breastfeeding attitudes, knowledge and self-efficacy of community health-care staff

Jenny Ingram, Debbie Johnson and Louise Condon
Prim Health Care Res Dev. 2011 Jul;12(3):266-75

The aim was to evaluate the effects of Baby Friendly Initiative (BFI) community training on breastfeeding rates, staff and mothers in a large Primary Care Trust (PCT). UK Government policy promotes the adoption and implementation of the World Health Organization/United Nations Children's Fund BFI as the best evidence to raise breastfeeding initiation and prevalence. Methods: A total of 141 health visitors and nursery nurses were trained on mandatory three-day BFI courses during 2008; 137 staff (100 health visitors, 37 nursery nurses) took part in the evaluation.

Breastfeeding attitudes, knowledge and staff confidence in helping mothers to breastfeed were measured using a validated Breastfeeding Questionnaire and a self-efficacy tool at three time points before and after training. Breastfeeding rates at eight weeks increased significantly, and a baby born in 2009 was 1.57 times more likely to be breastfed than one born in 2006. Statistically significant improvements in staff breastfeeding attitudes, knowledge and self-efficacy were seen after attending the course, in addition to increases in the appropriate management of breastfeeding problems.

Process evaluation interviews with 43 health visitors, nursery nurses and managers explored views of the training and changes in practice. The response to the course was overwhelmingly positive and felt to be extremely worthwhile. It has led to renewed enthusiasm, improved the consistency of advice among team members and raised confidence levels of all staff who help mothers with breastfeeding. Health visitors felt confident about enabling nursery nurses to take a greater role in breastfeeding support. A small survey of mothers reported increases in exclusive breastfeeding and signs of increased breastfeeding self-efficacy. Making the training mandatory across the whole PCT has improved the consistency of breastfeeding advice and confidence of all health-care staff who help breastfeeding mothers.

Comments from the editor: *Although it is not possible to say for certain that the improvements in breastfeeding rates are due to the training, as this would require a randomized study design, it is encouraging that the authors have followed process evaluation techniques to evaluate the training. This and the triangulation of interviewing health visitors, managers and a sample of mothers lends credibility to the conclusions drawn. Self efficacy in dealing with breastfeeding problems and situations is important not only for mothers themselves, but also the health worker who aims to help her.*

Profiles of eight working mothers who practiced exclusive breastfeeding in Depok, Indonesia

Judhiastuty Februhartanty, Yulianti Wibowo, Umi Fahmida and Airin Roshita

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Exclusive breastfeeding practice is generally low because of multifaceted factors internally within mothers themselves and also the surroundings. In addition, studies have consistently found that maternal employment outside the home is related to shorter duration of exclusive breastfeeding. With all these challenges, it is interesting that there are some mothers who manage to exclusively breastfeed their infants. Therefore, this report aims at exploring the characteristics of working mothers who are able to practice exclusive breastfeeding. The original study population was non-working and working mothers who have infants around 16 months old. The study design is an observational study with a mixed methods approach using a quantitative study (survey) and qualitative methods (in-depth interview) in sequential order. In addition, in-depth interviews with family members, midwives, supervisors at work, and community health workers were also included to accomplish a holistic picture of the situation. The study concludes that self-efficacy and confidence of the breastfeeding mothers characterize the practice of exclusive breastfeeding. Good knowledge that was acquired way before the mothers got pregnant suggests a predisposing factor to the current state of confidence. Home support from the father enhances the decision to sustain breastfeeding.

Comments from the editor: *Working outside the home and being separated for long hours from the baby are factors often associated with a shorter duration of exclusive breastfeeding. In this article, the few mothers who did practice exclusive breastfeeding were interviewed to find out what made them stand out from the majority. This kind of formative research that explores patterns among so-called positive deviants is very useful for understanding complex behaviours such as exclusive breastfeeding. Once again, the important role of the supportive father reinforcing self-confidence in the mother is highlighted.*

The World Alliance for Breastfeeding Action (WABA) is a global network of individuals and organisations concerned with the protection, promotion and support of breastfeeding worldwide based on the Innocenti Declaration, the Ten Links for Nurturing the Future and the WHO/UNICEF Global Strategy for Infant and Young Child Feeding. Its core partners are International Baby Food Action Network (IBFAN), La Leche League International (LLLI), International Lactation Consultant Association (ILCA), Wellstart International, and the Academy of Breastfeeding Medicine (ABM). WABA is in consultative status with UNICEF and an NGO in Special Consultative Status with the Economic and Social Council of the United Nations (ECOSOC).

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