

The Effects on Professional Practices of a Three-Day Course on Breastfeeding

Verónica Valdés, MD,^a Edda Pugin, Registered Nurse-Midwife,^b
Miriam H. Labbok, MD, MPH,^c Alfredo Pérez, MD,^b
Silvia Catalán, MD,^a Ricardo Aravena, MSc,^d and Michelle R. Adler, BA^e

ABSTRACT - 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. *JHL* 11:185-190, 1995.

KEYWORDS: Baby Friendly Hospital Initiative, Breastfeeding, Hospital policy, Lactational Amenorrhea Method, Lactation education.

INTRODUCTION

The concept that a course of at least 18 hours can provide lactation management skills evolved during a series of meetings in support of the Baby-Friendly Hospital Initiative (BFHI). BFHI is the UNICEF approach to supporting the mandate of the Innocenti Declaration and the Statement of the World Summit on Children,¹ breastfeeding in the 1990s, and is designed to enable women to choose to breastfeed,

and to successfully implement that choice, through changes in clinical and hospital practices.

UNICEF elected to work with Wellstart and others in the development of the initial draft of an 18-hour BFHI course to be used by master trainers to teach health workers the necessary changes in clinical and hospital practices and how to achieve them. Other organizations also have developed effective 18-hour courses and health professionals worldwide are now being trained in 18-hour courses to encourage and support breastfeeding. However, there has been no published assessment of the impact of a course of this length on subsequent practices by individuals or institutions.²

In 1990, following the Innocenti Declaration, the Department of Obstetrics and Gynecology of the Catholic University of Chile, Santiago, and the Institute for Reproductive Health, Department of Obstetrics and Gynecology, Georgetown University Medical Center developed and presented a course in Santiago that included the findings of a collaborative research study on breastfeeding and postpartum infertility,³⁻⁵ as one aspect of a comprehensive update on breastfeeding research findings and breastfeeding support activities worldwide. An analysis of the reported impact of the Santiago course was carried out to provide insight on the potential impact and usefulness of an 18-24 hour course.

MATERIALS AND METHODS

Description of the Course. A three-day course, "Breastfeeding: Recent Advances," was presented as

Received for review, January 23, 1995; revised manuscript accepted for publication, April 22, 1995. Support for this publication was provided through a subagreement (#BIA1) with the Department of Obstetrics and Gynecology, Pontificia Universidad Católica de Chile, Santiago, by the Institute for Reproductive Health, Georgetown University, under Cooperative Agreement with the Agency for International Development (AID) (DPE-3040-A-00-5064-01). The views expressed by the authors do not necessarily reflect the views or policies of AID, Georgetown University, or the Pontificia Universidad Católica de Chile, Santiago.

^a from Department of Pediatrics, Pontificia Universidad Católica de Chile, Santiago, Chile.

^b from Department of Gynecology and Obstetrics, Pontificia Universidad Católica de Chile, Santiago, Chile.

^c from Breastfeeding and MCH Division, Institute for Reproductive Health, Department of Obstetrics and Gynecology, Georgetown University Medical Center, Washington, DC USA.

^d from Department of Statistics, Faculty of Mathematics, Pontificia Universidad Católica de Chile, Santiago, Chile.

^e from Brown University, Public Policy Program, Intern.

Address Correspondence to: MHL, Director, Breastfeeding and MCH Division, The Institute for Reproductive Health, Department of Obstetrics and Gynecology, Georgetown University Medical Center, Georgetown Center, 6th Floor, 2115 Wisconsin Avenue, NW, Washington, D.C. 20007 USA.

part of the dissemination of results from a research project entitled, "The Effect of a Breastfeeding Promotion Program during the Infertile Postpartum Period."³ This project was developed by the Department of Obstetrics and Gynecology, the Catholic University of Chile, Santiago, in collaboration with and supported by the Institute for Reproductive Health. The course was an important part of this project. Faculty included Chilean and international experts in health, nutrition, family planning, and breastfeeding. Three hundred sixty health professionals participated in the course including 123 midwives,* 48 nurses, 45 nurse-midwives,* 26 nutritionists, 24 general practitioners, 18 pediatricians, 15 obstetricians, and four social workers. The remaining 57 included students, residents, and representatives of government ministries. Some attended the course as teams representing their institutions.

The main objectives of this course were 1) to offer health professionals updated knowledge on breastfeeding management and program approaches, including the results of selected clinical and operational research efforts from the region, and 2) to provide workshops, in order to allow sharing of experiences, enhancing the ability of the participants to acquire self-confidence in developing programs and providing clinical support for breastfeeding women.

The course topics were presented using didactic, participative, and audio-visual techniques and included the following:

- 1) International trends, activities in support of policy change, and multilateral support for breastfeeding.
- 2) The beneficial impact of breastfeeding on postpartum recovery and on women's health, including reduced cancer risk.
- 3) The composition of human milk, how it meets the nutritional and immunological needs of infants and other child health effects of breastfeeding.
- 4) The Lactational Amenorrhea Method (LAM) as an introductory family planning method, the additional contribution of breastfeeding to child spacing, and the results of the Santiago study.
- 5) The anatomy of the breast and the physiology of lactation, focused on improvement of the clinical management of breastfeeding.
- 6) Clinical support for breastfeeding women: prenatal education, nursing immediately following the birth of the

* In Chile, midwives are trained as a professional group. Nurse midwives receive both nursing and midwifery training, and function more independently than midwives.

baby, rooming-in, and assistance during the hospital stay, at early check-ups of mother and infant, and in the lactation clinic.

- 7) Skills for teaching breastfeeding techniques: an active participation workshop was conducted using dolls to teach the participants proper breastfeeding techniques.¹²
- 8) Maternal problems that interfere with breastfeeding: examples include sore nipples, engorgement, candidiasis, obstructed duct, mastitis, flat or inverted nipples, and insufficient milk production.
- 9) Infant-related problems that interfere with successful breastfeeding: examples include anatomical problems, oral-motor dysfunction, infants who refuse to suckle, and feeding premature infants.
- 10) Controversies in breastfeeding: AIDS and other infectious diseases that could be transferred from mother to infant during breastfeeding as well as conditions of the mother or infant that might contraindicate breastfeeding.
- 11) The effects of drugs transferred through breastmilk or that interfere with lactation.
- 12) Breastfeeding support for working women at the societal, community, and individual levels, including legislation, milk expression, and milk storage.
- 13) Maternal nutrition: the nutritional requirements for maintaining women's health during pregnancy and lactation.
- 14) Breastfeeding and/or LAM support and promotion programs and research from the region: Chilean studies and support efforts, a maternal-child health and community breastfeeding project in Mexico (FEMAP), Mother-to-Mother support in Honduras (La Leche League, International), use of mass media in Peru, and lactation management education for health professionals carried out by Wellstart.

While similar in content to the 18-hour course developed later, the Santiago course included information on the maternal health and postpartum fertility effects of breastfeeding that are not currently in the 18-hour course.

All participants were asked to complete a pre- and post-test. Results revealed increased knowledge in all areas.

Description of the Questionnaire and Response. Two years after the course, a questionnaire was designed by the faculty of the conference to reflect course materials and content. It was sent to 318 participants of the course for whom addresses were available. The purpose of the questionnaire was to assess

participants' opinions about whether the three-day course had an impact on their clinical practices related to breastfeeding.

The questionnaire included five basic open-ended questions:

- 1) Which of the course topics were most useful in your clinical practice?
- 2) Have you changed your clinical practices or recommendations related to breastfeeding while working with pregnant women, mothers, and infants as a result of taking the course?
- 3) How long do you recommend to mothers that they exclusively breastfeed?
- 4) What new activities have you offered to promote breastfeeding based on the course?
- 5) On which topics would you like to receive more information?

In addition, the questionnaire included sets of yes-no questions, designed to be answered by those in selected specialty areas: prenatal care, maternity ward, neonatal special care, postpartum ward, or outpatient pediatric care. The questionnaire was pretested with ten participants and no major changes were made based on the pretest.

Twenty-eight responses were received following the first mailing and 34 in a second mailing, for a total of 62 (19.5 percent). In order to obtain a sufficient response rate for statistical analysis, a stratified (by profession) systematic sample of 38 participants was selected and contacted by telephone. It should be noted that all institutions from which participants came are equipped with telephones, so no bias is expected from using this approach in Chile. The result of this effort was a total sample size of 100. The mailed responses and the stratified systematic sample were then compared by chi-square analysis revealing no significant differences.

Analysis plan: Descriptive analysis includes percentages in categories in response to the questions. Statistical analysis was carried out using chi square for statistical significance, with $\beta=0.8$ and $\alpha=0.05$.

RESULTS

The responses to the five basic open-ended questions were collated from the 100 responses. The three topics most often reported to have been of use in practice are:

- Breastfeeding techniques and clinical support for lactation – 41 percent
- Postpartum infertility and the use of LAM – 19 percent
- The advantages of breastfeeding – 11 percent

Sixty nine percent of the respondents reported changes in clinical practice following the course. Of these, 49 percent report that they now stress the importance of breastfeeding to mothers, 25.5 percent now observe and correct breastfeeding technique, seven percent are more confidently recommending LAM to mothers, and seven percent are encouraging mothers to exclusively breastfeed for six months.

The optimal period of six months of exclusive breastfeeding has become the recommendation of 86 percent of the respondents. Six percent still report recommending less than 6 months, while eight percent recommend more than six months of full breastfeeding.

Reported new activities include 56 percent initiating or enhancing education given to mothers, 21 percent sharing information received in the course with other health professionals in their institutions, and 15 percent creating clinical lactation support in their place of work.

Twenty nine percent of respondents reported wanting more information on the use of LAM, 25 percent wanted more on techniques to help mothers maintain lactation, and 10 percent requested more information on relactation and adoptive nursing.

Workplace-specific Questions. The participants answered only those questions relevant to their area of work, however, several reported working in more than one setting. Thirty-six reported involvement with prenatal care, 32 in maternity wards, 16 in neonatal special care, 41 in postpartum care, and 30 in pediatric outpatient facilities.

Prenatal care. Following the course, there is a nearly 28 percent increase in teaching breastfeeding techniques and distributing printed material to pregnant women on the value and importance of breastfeeding (see Table 1).

Maternity ward. There is a 15-20 percent increase in optimal breastfeeding support practices and marked improvement in what infants were actually fed. Improvements were seen in assisting with the first breastfeed, supervising breastfeeding techniques, and recommending that mothers feed on demand (on cue). Further, there was a reported 12.5 percent increase in existence of policy supportive of immediate postpartum rooming-in, from 31 percent to nearly 44 percent. Respondents also noted significant changes in what infants were fed. Before the conference, only three-quarters of the respondents' institutions allowed infants to receive colostrum as the first feeding. After the course, 90 percent reported that infants

Table 1. Participant Reporting of Activities Before and After Training Course (in Percent)

	Before	After	p<
Prenatal care practices (n=36)			
Teaching breastfeeding techniques	67	95	0.001
Distributing printed materials	19	42	0.01
Maternity ward changes in policies and practices (n=32)			
Assisting mother: first nursing episode	72	91	0.05
Supervising breastfeeding technique	75	91	ns
Recommending on demand feeding	67	94	0.01
Immediate postpartum rooming-in	31	44	ns
Maternity ward: infant feedings (n=32)			
Colostrum received as first feed	75	91	ns
Glucose water	28	6	0.05
Commercial formula or substitute	25	13	ns
Commercial formula or substitute when baby is "hungry"	19	3	ns
Commercial formula or substitute given only by medical prescription	72	97	0.01
Neonatal special care practices (n=16)			
Infants receive breastmilk	40	59	ns
Sick infants breastfed	35	50	ns
Instruction on milk expression given	88	99	ns
Postpartum clinical practices (n=41)			
Observe mother breastfeeding	58	90	0.001
Do breast examination	93	100	ns
Recommend LAM use	27	46	0.01
Pediatric outpatient care practices (n=30)			
Special care for breastfeeding problems	54	89	0.001
Observe breastfeeding technique	50	86	0.001

in their institutions received colostrum as the first feeding. The use of glucose water and commercial milk decreased 22 percent and 12.5 percent, respectively, reflecting the higher rate of on-demand breastfeeding and the increase in rooming-in policies.

Neonatal special care. Reported use of breastmilk among special care infants increased from 40 percent to nearly 60 percent. This increase may have been due to other changes, including allowing mothers to breast-feed their sick infants without restrictions and instructing the mothers how to express their milk so it could be fed to the infants (see Table 1). Although none of these results were statistically significant, probably because the number of respondents was small, there is a clear potential clinical significance in this level of increase. One institution had taken the large step of developing a milk bank where the mother's milk could be stored and later fed to her child.

Postpartum care. Respondents reported a 30 percent increase in the practice of observing mothers breastfeeding their infants following the course. Furthermore, the percent of health professionals stating that

they examined the breasts of new mothers increased from 93 to 100 percent. The recommendation to use the Lactational Amenorrhea Method (LAM) increased by almost 20 percent to 46 percent (see Table 1).

Pediatric outpatient care. Since the course, 30 percent more health workers stated that their institutions provide specialized treatment to mothers with breastfeeding problems. Thirty percent more reported observing breastfeeding technique at the first infant check-up (Table 1). The average ages recommended for initiating and completing weaning and for introduction of cow milk-based supplements were extended by two months (see Figure 1).

DISCUSSION

The results reveal reported increases in all practices stressed in the three-day training as well as policy change at the institutional level. The questionnaire approach used in this study does not allow us to fully explore attitudes nor the reasons why some of the recommended practices were not well implemented. Nor are we able to control for the bias that might have resulted from the fact that the respondents were aware that the questionnaire was being sent by the same group that had carried out the training.

Nonetheless, it is clear that several of the new services the health workers report offering to mothers and infants correspond directly with the aspects of the course they reported as most useful. The fact that the information on breastfeeding techniques and clinical support for lactation was used by the participants to correct the breastfeeding techniques of mothers underlines the utility of the course content. The education regarding postpartum infertility and the use of LAM allowed health workers to recommend this method of family planning more confidently. And the material regarding the advantages of breastfeeding caused almost half of the participants to place stronger emphasis on the importance of breastfeeding to mothers.

It is of interest that there was not always direct correlation between statement of strength of interest in a particular subject and participants' clinical behavior changes. There was not a consistent relationship between the course topics that the participants reported as having been useful in their clinical practices (1), the actual changes in clinical practices that were reported (2), and the areas about which there are requests for more information (5). Forty-one percent of the participants responded that the information on breastfeeding and clinical support for lactation was most useful in their clinical practice but only about one-quarter of the respondents said that they had

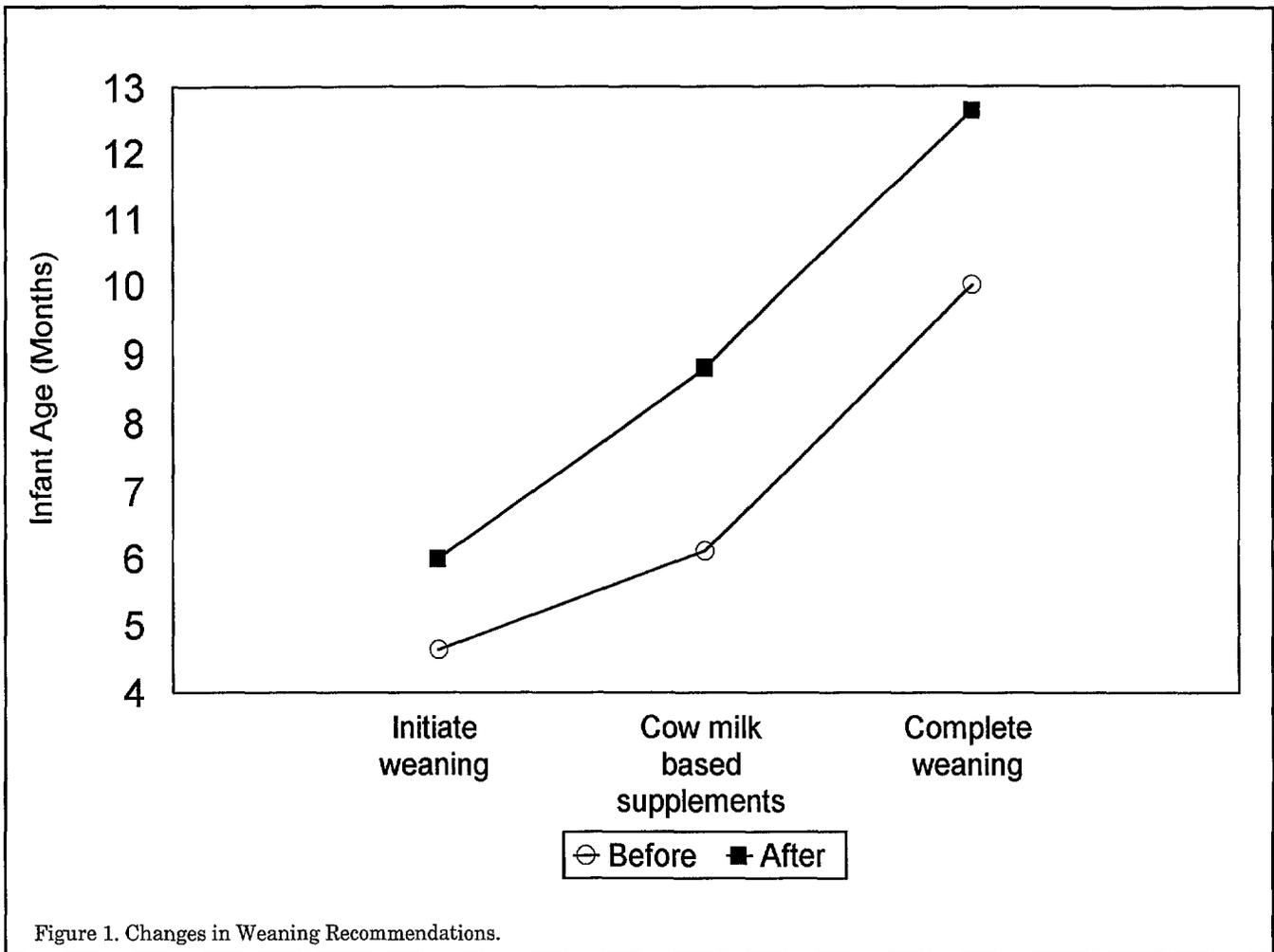


Figure 1. Changes in Weaning Recommendations.

changed, enhanced, or begun the correction of breastfeeding techniques.

Eleven percent noted that the information on the use of the Lactational Amenorrhea Method (LAM) was useful and there is a 7.3 percent increase in the number who report more confidently recommending LAM to mothers after taking the course. However, 29 percent stated that they would like to receive more information on this topic, indicating that they feel it is needed and useful.

Although only 11 percent of the participants stated that the information on the advantages of breastfeeding was most useful to them, nearly half report stressing this issue with mothers since taking the course.

While it is difficult to speculate why these differences occurred, it may be that areas where interest was initially expressed were those with which the individual already had experience, and that new needs arose as the participant returned to work and began to implement some changes.

The results of this study clearly illustrate that a three-day (24-hour), large, well-organized, intensive

lactation course can have a major impact on the clinical practices of the participants, and that these changes are in well documented practices considered extremely important for breastfeeding promotion.⁶⁻⁹ This is in accordance with accepted principles of effective education.¹⁰ The topics chosen and the manner in which they were presented gave the health professionals the basic scientific and practical knowledge to change programs and to clinically support breastfeeding. Social or cognitive learning theory,¹¹ which includes recognition that the feedback from behavior changes can reinforce learning, supports the conclusion that the reported changes may also have been supported by the presentation of successful breastfeeding support and promotion programs (observational knowing) carried out by personnel in institutions similar to those represented in the audience, coupled with the interactive workshops where participation in role play increased self-efficacy. This theory may also account for the reported differences in topics that were reported of interest at the time of the course and those that became of greater interest following return to clinical practice where new knowledge led to changes in behavior.

Participants reported that the course, in general, sparked changes in their breastfeeding promotion activities and enhanced the education provided for mothers. Many participants later carried out another training (i.e., second level training) for other health workers in their institutions, or shared their new knowledge with their colleagues. More than half of the respondents stated that they had initiated or enhanced maternal education. The fact that 15 percent had created a lactation clinic in their workplace reflects a significant program and service change.

There remains room for improvement in those areas where policy change, rather than individual practice, is necessary. These include in-hospital formula use, neonatal use of breastmilk, breastfeeding of sick infants, immediate postpartum rooming-in, and the introduction of child spacing concepts in prenatal, maternity, and pediatric services. Nonetheless, significant strides are reported in both individual practices and institutional policy following this brief educational experience. The request for more information on LAM, milk expression and storage, and relactation and adoptive nursing may reflect new workplace experiences and is helpful when considering the content of future courses on breastfeeding.

Clearly, this course did not take place in a vacuum; breastfeeding had not disappeared in Chile and there is general acceptance and belief, at least in principle, that breast is best. What was not well known were clinical skills and the methods and models of how to implement change. The contextual support certainly contributed to the apparent impact of this course. Conversely, by training a large number of health professionals, the course itself contributed to the skill and knowledge base of the national professional community.

A course of this nature, with a large audience and limited workshops, cannot replicate the more individualized and practical instruction of a program directed to small groups.¹² Nonetheless, with large numbers of health workers needing training and limited resources available, the results of this study are

encouraging that a brief (18-24 hour), well-organized, intensive course can play a dynamic role in support of improved breastfeeding policy, programming, and clinical practices.

REFERENCES

1. UNICEF Executive Directive: The Baby-Friendly Hospital Initiative. CF/EXD-IC/1991-028. add 1. December 30, 1991.
2. Hughes V, Ryan C, Owen J: Catching the spirit: the Baby-Friendly Hospital Initiative. Instructional Modules for Hospital Staff Training. National Capital Lactation Center and Nursing Education and Research, Georgetown University Medical Center, Washington, DC, 1993; passim.
3. Valdés V, Pérez A, Labbok MH, Pugin E, Zambrano I, Catalán S: The impact of a hospital and clinic-based breastfeeding promotion program in a middle class urban environment. *J Trop Pediatr* 1993; 39: 142-51.
4. Pérez A, Labbok MH, Queenan JT: A clinical study of the Lactational Amenorrhea Method for family planning. *Lancet* 1992; 339(8799):9688-70.
5. Labbok MH, Pérez A, Valdés V, Sevilla F, Wade K, Laukaran VH, et al: The Lactational Amenorrhea Method: a postpartum introductory family planning method with policy and program implications. *Adv Contracept* 1994; 10:93-109.
6. Savage F: The need for action. *Int J Gynecol Obstet* 1990; 41:11-15.
7. Lawrence R: Breastfeeding in modern medicine (Chapter 1) *In: Breastfeeding: A Guide for the Medical Profession*, 4th ed. St. Louis: CV Mosby Company, 1994; pp. 1-33.
8. Jelliffe D, Jelliffe P, Eds: Programmes to Promote Breastfeeding, Part 2 and Part 9. Delhi: Oxford University Press, 1988; pp. 14-17, 267-376.
9. WHO and UNICEF: Protecting, Supporting, and Promoting Breastfeeding: The Role of Maternity Services. Geneva: WHO, 1989; passim.
10. Muir Gray JA: Continuing education: what techniques are effective? *Lancet* 1986; 2(8504):447-48.
11. Giseff J, Elden J, Booth E: Communication for Health and Behavior Change. San Francisco: Jossey-Bass, 1993; passim.
12. Naylor A: Professional education and training for trainers. *Int J Obstet Gynecol* 1990; 41:25-27.