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Multicenter Study of the Lactational Amenorrhea Method (LAM): II. Acceptability, Utility, and Policy Implications

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A multicenter study of the Lactational Amenorrhea Method (LAM) was carried out to determine acceptability, satisfaction, and utilization in 10 different populations, and to confirm the efficacy of the method. Efficacy data are presented in a companion paper. A protocol was designed at the Institute for Reproductive Health (IRH), Department of Obstetrics and Gynecology, Georgetown University Medical Center, and reviewed and modified in collaboration with the co-sponsors, the World Health Organization, the South-to-South Cooperation for Reproductive Health, and the principal investigators from each site. Data were gathered prospectively on LAM users at 11 sites. Data were entered and cleaned on-site, and further cleaned and analyzed at IRH, using country-level and pooled data to produce descriptive statistics. The overall satisfaction with LAM was 83.6%, and continuation with another method of family planning was shown to be 67.6% at 9 months postpartum, in most cases exceeding previous use of contraception prior to use of LAM. Knowledge and understanding of the method at discontinuation were high, ranging from 78.4 to 88.6% for the three criteria. LAM can be used with a high level of satisfaction and success by women in a variety of cultures, health care settings, socio-economic strata, and industrial and developing country settings. The results confirm that LAM is acceptable and ready for widespread use, and should be included in the range of services available in maternal and child health, family planning, and other primary health care settings. CONTRACEPTION 1997;55:337–346

KEY WORDS: Lactational Amenorrhea Method (LAM), breastfeeding, family planning

Introduction

The Lactational Amenorrhea Method (LAM) is a family planning method that simultaneously promotes child spacing and breastfeeding with the benefits of optimal nutrition and disease prevention for the infant, and a delay of fertility return and subsequent pregnancy for the mother. LAM relies on lactational infertility for protection from pregnancy. At the Bellagio Consensus Conference in August 1988,[1] researchers agreed that a mother who meets three criteria has less than a 2% chance of pregnancy during the first 6 months after giving birth. The three criteria are that the mother must be amenorrheic, fully or nearly fully breastfeeding, and under 6 months postpartum. These three criteria were codified as an algorithm which was given the name "Lactational Amenorrhea Method (LAM)" in a 1989 meeting at Georgetown University, which emphasized a fourth item: when any of the three criteria change, it is necessary to use another family planning method in order to maintain the same high level of protection.[2]

Although the efficacy of the method had been demonstrated previously in several populations,[3,4] the present study was designed to confirm the efficacy in a wider range of populations and to show acceptability and utilization in these populations. To

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assess acceptability adequately, a family planning method should be tested among different cultural groups and health care settings. This collaborative multicenter study of the Lactational Amenorrhea Method was designed with this purpose in mind. The aim of this study was to assess knowledge and satisfaction with LAM in a variety of defined populations; correctness of LAM use, including timely acceptance of complementary family planning after the end of the use of LAM; and outcomes for clients who do not adhere to the recommended LAM guidelines.

Acceptability and Satisfaction

Comparing the acceptability of LAM to that of other family planning methods presents special difficulties in that LAM is an interim method, and by definition cannot be used on a long-term basis. Another major issue for acceptability of LAM is the contrast between industrialized and developing countries with regard to propensity to breastfeed. The prevalence of full breastfeeding in a community, and willingness to accept a breastfeeding-based method of contraceptive is shown by the difference in the time required to complete recruitment for the study. Among the developing countries, all but one site had a recruitment time of 4 months or less. In the industrialized countries, all but one site had recruitment periods of 11 months or more, although the Swedish site filled their recruitment in 6 months. For most of the industrialized countries, recruiting women who wanted to fully breastfeed was difficult, while in the developing countries, where extensive breastfeeding is commonplace, recruitment was significantly easier. In addition, women in industrialized country sites were more reluctant to accept a method based on breastfeeding due to concerns about efficacy.

Continuation of Family Planning Use After LAM

A major concern about the use of LAM is that by definition it is a short-term interim method and has an inherent limit on the amount of time it can be used. Therefore, it is important to assess how well acceptors adhere to the fourth parameter: timely introduction of another family planning method that is complementary to breastfeeding.

Methods

Data were gathered prospectively on LAM users in 10 countries and were entered and cleaned on-site in each country using standardized computer forms. Data files were further edited, cleaned, and analyzed at IRH, using the Statistical Package for the Social Sciences (SPSS) software program, version 6.1.2.[5] In order to ensure data consistency, wording for each of the questions for all forms was given to the investigators at each site and translated by study teams locally. The data used for this paper include information on continuation of family planning and knowledge of and satisfaction with LAM. Study sites in industrialized countries were Stockholm, Sweden; Birmingham, United Kingdom; Washington, DC, United States; and a European site with data from Dusseldorf, Germany, and Milan, Italy. Developing country sites were in Assiut, Egypt; Jakarta, Indonesia; Mérida, Mexico; two sites in Nigeria: Jos and Sagamu; and Manila, Philippines.

Most of the information used here was obtained from the women when they discontinued LAM or during follow-up visits at 6, 9, and 12 months postpartum, regardless of the time or reason for discontinuation. Each woman who discontinued LAM, whether at 6 months or earlier, was administered a discontinuation questionnaire. This form included information on the reason for ceasing to use LAM, as well as knowledge of the LAM criteria, satisfaction with the method, desire for child spacing, pregnancy status, weight of the mother, and current family planning use. If the woman withdrew from the study before 6 months postpartum, the date and reason for withdrawal were recorded, along with her plans for current and future methods of family planning. Specifics on the protocol, instruments, general procedures, recruitment, and data collection and analysis are presented in a companion paper discussing the efficacy and other clinical aspects of LAM.[6]

Use of LAM

Since LAM is a knowledge-based method, the study investigators wanted to know how much information about the requirements of LAM a mother remembered throughout her period of LAM use. Although LAM allows for some flexibility, the method requires that the mother be aware of, and adhere to, the three requirements for LAM, and that she be aware of the fourth parameter: the need to change to another method if any of the three requirements are not met. In order to assess the client's knowledge of LAM at the time of method discontinuation, the following questions were included. The interviewer first asked: "Can you tell me the criteria for the Lactational Amenorrhea Method of family planning?" For each of the three criteria (no return of menses, fully breastfeeding, and under 6 months postpartum), the interviewer indicated whether the woman's response was recalled spontaneously, whether it was prompted, or whether she had no recall. The interviewer then asked: "Are there any other things that are important to remember about LAM?" For each additional aspect (timely use of continued family planning, no long

intervals between breastfeeds, and the importance of night feeds), the interviewer indicated whether the woman's response was recalled spontaneously, whether it was prompted, or whether she had no recall.

Satisfaction with LAM

An important component of this study was to determine if LAM could be used successfully and with satisfaction by women of different cultural and ethnic backgrounds and in different settings. In order for LAM to be widely implemented in family planning service delivery settings, more information was needed on how it would perform in different environments. At the time of method discontinuation, a series of questions were asked of study participants in the hope of gaining important information on actual use of LAM. The interviewer began with the introduction: "We would like to know how well LAM and breastfeeding worked for you." Four questions were asked with responses coded on a 5-point Likert scale. These questions were:

1. "Would you say you are very satisfied with LAM, somewhat satisfied, neutral, somewhat dissatisfied, or very dissatisfied?"
2. "Did you find breastfeeding during the day to be a problem for you: never, rarely, sometimes, often, or always?" If the response was that there were problems, the client was asked why, or what the problems were, and responses were recorded verbatim.
3. "Did you find breastfeeding at night to be a problem for you: never, rarely, sometimes, often, or always?" If the response was that there were problems, the client was asked why, or what the problems were, and responses were recorded verbatim.
4. "We would like to know if you have generally been satisfied with the experience of breastfeeding your child. Would you say that your overall experience has been: very satisfying, somewhat satisfying, neutral, somewhat unsatisfactory, or very unsatisfactory?"

There were two follow-up questions that offered the client a chance for open-ended responses. These were: "Did you have any particular problems with the method?" and "Have you had any problems with infant feeding that made it difficult for you to continue with LAM?" For each question, if there were any problems, answers were recorded verbatim. Finally, women were asked "What did you like best about LAM?" and "What did you like least about LAM?" Up to three responses were recorded for each of these questions. These questions were designed to give an overview of satisfaction and knowledge, and also to permit clients to reflect on their attitudes toward LAM and breastfeeding.

Child Spacing

LAM is an interim family planning method; for this reason assessment of continuation of family planning use after LAM was a key component of this study. Because it was assumed that women who have used contraception before LAM are more likely to use a method of child spacing after LAM, prior use is taken into account in the analysis. At the time of LAM discontinuation, each client was asked, "What is (are) the family planning method(s) you are currently using or will be using?" The date this method began or was intended to begin was noted, and the client was asked where she had been referred for family planning services. Up to two methods were recorded from a coded list; if the client responded that she would rely on lactational amenorrhea after LAM, this also was recorded. Clients who chose to rely on continued lactational amenorrhea were advised of the increased possibility of pregnancy.

Results

Study Population

This analysis includes 519 LAM acceptors from a variety of national and ethnic backgrounds. Study participants were recruited from various types of clinical facilities and were not intended to be representative either locally or nationally. The demographic characteristics for the different sites are shown in Table 1. The mean age of clients at developing country sites ranged from 23 years of age in Mexico to 27 years in Sagamu, Nigeria, while the mean age for women from industrialized countries ranged from 30 years in Germany to 32 years in the United States. The level of education for women in developing countries varied from 4 years in Egypt to 10 years in Indonesia and Sagamu, Nigeria. Generally, developing country women had only primary school education. The clients in industrialized country sites generally had some post-secondary education with the mean years of education ranging from 13 years in Germany to 17 in the United States.

Prior use of contraception also varied among the sites. Predictably, prior use was higher in industrialized countries. In the Swedish study group, all women had used contraception prior to the study. In the other industrialized country study groups, the proportion that had never used contraception was 12% or less. In contrast, among the developing country study groups,

Table 1. Characteristics of acceptors

Site	N	Mean Age in Years	Mean Years School	Mean Parity	Primiparous %	Work Outside Home at 6 Months Postpartum %	Never Used Family Planning Before %
Egypt	59	25.9	4.1	3.2	25.4	0.0	71.2
Indonesia	61	25.2	10.3	1.5	63.9	8.2	83.6
Mexico	50	23.0	5.6	2.1	42.0	8.0	58.0
Nigeria, Jos	60	25.1	7.8	3.0	20.0	38.3	25.0
Nigeria, Sagamu	47	27.3	10.5	2.4	27.7	51.1	29.8
Philippines	47	26.1	8.9	3.0	2.1	2.1	66.0
Germany/Italy	47	29.6	13.1	2.7	44.3	15.9	12.4
Sweden	51	30.6	14.5	1.9	41.2	0.0	0.0
United Kingdom	49	31.9	15.3	2.1	26.5	14.3	2.0
United States	48	31.9	16.5	2.3	37.5	18.8	10.4
Total	519	27.5	10.5	2.4	33.5	15.4	37.2

there was much more variation in the proportion that had never used contraception, ranging from slightly more than 83% of the Indonesian clients to 25% among those in Jos. As would be expected, parity was higher in the developing country sites. One site, the Philippines, restricted recruitment to multiparous women with the exception of one subject. Among the others, 20% were primiparous in Jos and 64% were primiparous in Indonesia. Mean parity was lower in the industrialized countries, ranging from 1.9 in Sweden to 2.7 in Germany and Italy. Religious affiliations are given in Table 2 to illustrate the diversity of the populations that were included in the study. The main religions represented were Christianity and Islam.

As reported in the companion paper, LAM was found to be a highly effective method of contraception; the 6-month life table results for correct use of LAM show an efficacy rate of 98.5 ± 0.7%. Among the 519 clients, 62% continued to use LAM successfully in the 6th month postpartum, indicating that they were not pregnant and were still amenorrheic, still fully breastfeeding according to the LAM guidelines, and still relying on the method at 6 months postpartum. Details of the efficacy of the method also are given in a companion paper.[6]

Continuation of Family Planning After LAM Use

Because LAM is a short-term method, an important objective of this study was to assess the outcome of LAM with respect to acceptance of another method of family planning. The continuation of family planning is dependent in part on the prior experience with family planning in the various study groups. In this multicenter study, prior use of family planning varied among the countries, particularly between industrialized and developing countries. The continuation of family planning was generally higher at 9 months postpartum than at the 6-month follow-up visit. This may have been because women who were just 6 months postpartum, still amenorrheic, and fully

Table 2. Religious affiliation of acceptors

Site	Catholic %	Protestant %	Christian, Unspecified %	Islam %	Other %	None %
Egypt	—	—	1.7	98.3	—	—
Indonesia	1.6	—	—	96.8	1.6	—
Mexico	84.0	16.0	—	—	—	—
Nigeria, Jos	—	—	53.3	46.7	—	—
Nigeria, Sagamu	2.1	8.5	46.8	27.7	14.9	—
Philippines	93.6	—	—	2.1	4.3	—
Germany/Italy	79.5	9.8	—	3.6	7.2	—
Sweden	—	76.5	—	5.9	—	17.6
United Kingdom	18.4	46.9	16.3	—	6.1	12.2
United States	39.6	20.8	14.6	—	10.4	14.6
Total	29.3	17.1	13.5	31.6	4.2	4.2

Table 3. Family planning (FP) use

Site	Ever Used FP Prior to LAM %	Use FP at Month 6 PP* %	Use FP at Month 9 PP* %	Use FP at Month 12 PP* %
Egypt	28.8	3.4	71.2	84.7
Indonesia	16.4	26.2	23.0	23.0
Mexico	42.0	22.0	52.0	44.0
Nigeria, Jos	75.0	11.7	81.7	81.7
Nigeria, Sagamu	70.2	40.4	93.6	93.6
Philippines	34.0	46.8	76.6	63.8
Germany/Italy	87.6	58.3	77.0	76.1
Sweden	100.0	21.6	76.5	56.9
United Kingdom	98.0	28.6	69.4	61.2
United States	89.6	20.8	72.9	60.4
Total	62.8	26.6	68.4	64.0

* PP = postpartum.

breastfeeding would not have been required under the LAM parameters to adopt another method prior to the interview at 6 months postpartum.

There was variable success among sites in the promotion of continued contraception after LAM. Among all women participating in the study, 27% were using another form of family planning directly after discontinuing LAM or at the 6-month follow-up visit. However, at the 9-month follow-up visit, the percentage had increased to 68%, and at 12 months the proportion using family planning remained about the same. The proportion that had used a contraceptive method previously for each site together with continued method use at 6, 9, and 12 months postpartum are given in Table 3. In all developing country sites, the proportion using contraception at 12 months exceeded the prior level of ever use in the lifetime of the client. For example, in Indonesia, ever use was 16% and use at 12 months was 24%. In Mexico there was little difference between ever use prior to the study and use at 12 months postpartum. The two Nigerian sites had high levels of ever use and improved on these at 12 months postpartum. In both Egypt and the Philippines, there were substantial increases in contraceptive use among LAM acceptors in the study: a substantial proportion of women who had never practiced contraception before were using a method at 12 months postpartum.

Another factor that influences continuation of family planning is the desire for child spacing. All participants in the study were counseled on the importance of spacing births, with at least 24 months between pregnancies. At follow-up interviews, study participants were asked if they still wanted to delay or avoid pregnancy. Table 4 shows the proportion of women desiring to limit or space childbearing together with the proportion of women using family planning at 9 and 12 months postpartum. The majority of participants desired child spacing at 9 months. The low levels in the United Kingdom (69%) and the United

Table 4. Use of family planning at 9 and 12 months postpartum by women who desire child spacing

	Month 9 Postpartum			Month 12 Postpartum		
	Desire Child Spacing			Desire Child Spacing		
Site	%	(N)	Use FP* %	%	(N)	Use FP* %
Egypt	86.4	(51)	82.4	83.1	(49)	100.0
Indonesia	96.7	(59)	23.7	96.7	(59)	23.7
Mexico	76.0	(38)	68.4	56.0	(28)	78.6
Nigeria, Jos	83.3	(50)	98.0	83.3	(50)	98.0
Nigeria, Sagamu	93.6	(44)	100.0	93.6	(44)	100.0
Philippines	89.4	(42)	85.7	70.2	(33)	90.9
Germany/Italy	96.5	(45)	80.0	92.9	(43)	81.4
Sweden	82.4	(42)	92.9	62.7	(32)	90.6
United Kingdom	69.4	(34)	79.4	59.2	(29)	72.4
United States	75.0	(36)	94.4	60.4	(29)	93.1
Total	85.0	(441)	78.7 (347)	76.3	(396)	80.8 (320)

* Among women desiring child spacing.

Table 5. Type of method chosen by women using family planning at month 9 postpartum

Site	N	Pill: Progestin-only	Pill: Combined	IUD	Condom	Diaphragm	Progestin Injection	NFP/FA*	Withdrawal	Other†
Egypt	42	—	2	20	5	8	4	—	3	—
Indonesia	14	3	—	1	3	—	7	—	—	—
Mexico	26	—	7	—	8	—	3	—	8	—
Nigeria, Jos	49	4	6	9	3	—	—	8	14	5
Nigeria, Sagamu	44	—	1	8	13	—	—	10	3	9
Philippines	36	1	5	1	15	—	1	1	7	5
Germany/Italy	36	1	9	—	15	—	—	8	3	—
Sweden	39	3	2	9	9	1	—	1	3	11
United Kingdom	34	2	2	—	14	3	—	9	1	3
United States	35	1	2	—	11	—	—	11	2	8
Total	355	15	36	48	96	12	15	48	44	41

* Natural Family Planning/Fertility Awareness.
† Of these 41 cases, 92.7% (38) were relying on lactational amenorrhea. Of the other three women, one used the sponge and two used foam/jelly.

States (75%) reflect the highly self-selected study populations in those sites: many of these women whose breastfeeding practices were conducive to LAM expressed a pro-natalist life view, a preference for natural childbirth or a preference for natural family planning. In every site but Indonesia there was a strong relationship between desire for family planning and its use.

Table 5 shows method use by site for study participants contracepting at 9 months postpartum. The condom was the most often reported method used. Because several of the industrialized country research centers were oriented towards natural family planning (NFP), NFP use was common in those sites. The IUD and oral contraceptives also were frequently used. There was a considerable use of withdrawal in Mexico, Nigeria, and the Philippines, and to a lesser extent in the European sites (Germany/Italy and Sweden). Selection of withdrawal persisted despite counseling that favored use of modern methods. In several sites, some women preferred to continue to rely on lactational amenorrhea after 6 months postpartum despite counseling on the increased risk of pregnancy. All field sites were asked to maintain a separate code for this, but it is likely that some of the reported "non-users" in Egypt, Indonesia, and Mexico were actually relying on sustained lactational amenorrhea but were not recorded as such. As shown in the companion paper,[6] 66% of the participants in Egypt and Indonesia, and 46% of the women at the site in Mexico, were still experiencing lactational amenorrhea at the start of the seventh month postpartum. At the Nigerian sites, this number exceeded 75%.

The acceptance of LAM by women who had never used family planning previously, and LAM's potential to attract such women to modern methods, have been of some interest to family planning programs. Table 6 shows the proportion of women who never used

Table 6. Family planning use among women who had never used family planning prior to LAM

	Never Used FP Prior to LAM		Of Those Who Had Never Used FP Prior to LAM:	
Site	%	(N)	Use FP at Month 9 PP %	Use FP at Month 12 PP %
Egypt	71.2	(42)	69.0	88.1
Indonesia	83.6	(51)	23.5	23.5
Mexico	58.0	(29)	37.9	41.4
Nigeria, Jos	25.0	(15)	80.0	80.0
Nigeria, Sagamu	29.8	(14)	100.0	100.0
Philippines	66.0	(31)	71.0	67.7
Germany/Italy	12.4	(5)	80.0	80.0
Sweden	0.0	(0)	*	*
United Kingdom	2.0	(1)	—	—
United States	10.4	(5)	40.0	20.0
Total	37.2	(193)	54.9 (106)	58.5 (113)

* 100% of the women at the Swedish site had previously used family planning.

Table 7. Knowledge of LAM criteria by unaided recall at 6 months postpartum

Site	Bleeding Criterion %	6 Month Criterion %	Full BF* Criterion %	Timely Use of Family Planning %	No Long Intervals Between BF %	Importance of Night Feeding %
Egypt	94.3	96.2	92.5	60.4	83.0	90.6
Indonesia	89.8	98.3	91.5	52.5	62.7	59.3
Mexico	65.3	57.1	65.3	57.1	55.1	59.2
Nigeria, Jos	55.0	65.0	65.0	55.0	43.3	55.0
Nigeria, Sagamu	97.8	95.7	100.0	82.6	87.0	50.0
Philippines	97.7	83.7	90.7	74.4	74.4	86.0
Germany/Italy	86.9	86.9	85.1	83.3	77.9	83.3
Sweden	70.6	80.4	98.0	80.4	98.0	96.1
United Kingdom	71.4	73.5	100.0	61.2	98.0	67.3
United States	57.4	48.9	100.0	6.4	95.7	85.1
Total	78.4	79.0	88.6	61.1	76.6	72.8

* BF = Breastfeeding.

family planning prior to LAM and acceptance of family planning after LAM among these women. A number of countries, notably Egypt, Nigeria, and the Philippines, and to a lesser extent Mexico, showed a high level of acceptance of continued family planning among women with no prior family planning experience.

Knowledge of the Method

In actual practice, the definitive measure of knowledge for a method like LAM is the efficacy of the method in use. Nevertheless, study participants were asked to recall the specifics of the method at the time of discontinuation or at the 6-month follow-up visit. Results of these questions, given in Table 7 for unaided recall, were as follows: for the three LAM criteria, 78% recalled that LAM must be terminated when bleeding resumes, 79% of the women recalled that LAM must be terminated at 6 months postpartum, and 89% recalled the requirement for full or nearly full breastfeeding. Among the other feeding recommendations, the level of unaided recall was as follows: 77% of clients recalled the need for no long intervals between breastfeeds, and 73% recalled the importance of night feeding. Among all clients, 61% were able to state unaided that other family planning methods are needed when any of the first three basic requirements for LAM were not met. Aided recall for this item was an additional 35%.

Satisfaction with the Method

Another objective of the study was to determine the acceptability of and satisfaction with the method. At the time that LAM was discontinued, women in the study were asked a number of questions to assess satisfaction. This information is shown in Table 8. Not surprising, given the high level of continuation of LAM at 6 months postpartum, the overall satisfaction with LAM was high (84%). Only 13% of the women involved in the study reported any problems with LAM when used as their family planning method. Among the few women who did report problems with LAM, the most common complaints were the necessity for night feedings, concerns about limiting sup-

Table 8. Satisfaction with LAM

Site	"Very Satisfied" with LAM %	"No" to Problems with LAM %	"Never" to Daytime BF Problems %	"Never" to Nighttime BF Problems %
Egypt	83.0	89.8	90.6	77.4
Indonesia	96.6	96.7	98.3	96.6
Mexico	69.4	98.0	91.8	95.9
Nigeria, Jos	81.7	83.3	76.7	80.0
Nigeria, Sagamu	97.8	91.5	95.7	91.3
Philippines	97.6	89.4	100.0	100.0
Germany/Italy	86.8	95.6	86.8	81.5
Sweden	72.5	86.3	80.4	82.4
United Kingdom	75.5	71.4	83.7	77.6
United States	80.9	64.6	57.4	61.7
Total	84.1	86.9	86.1	84.5

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Table 9. Positive features of LAM—First item mentioned

Site	Economic/ Practical	Health Benefits for Baby/ Mother	Maternal–Child Bond	Natural/ No Side Effects*	Ease/ Convenience	Contraceptive Benefits	Supports Breastfeeding	Other
Egypt	12	9	—	19	11	—	—	1
Indonesia	18	21	—	—	—	15	—	5
Mexico	3	29	3	3	—	1	3	7
Nigeria, Jos	2	33	6	2	—	—	—	9†
Nigeria, Sagamu	18	17	7	—	1	2	—	1
Philippines	17	4	1	1	13	5	—	1
Germany/Italy	5	4	7	14	7	—	4	5
Sweden	1	2	—	22	10	4	3	8
United Kingdom	—	2	3	25	16	—	—	2
United States	—	—	3	16	15	3	2	6
Total	76	121	30	102	73	30	12	46

* This response includes "no need for other contraception."
† 5 of these 9 mentioned the positive publicity for LAM.

plements until after 6 months postpartum, and the necessity of monitoring intervals between breastfeeds (a research requirement).

In Table 9 the responses are given to the open-ended question on positive features of LAM. The responses vary somewhat by site and this could be due either to cultural differences or the counseling program at the particular site. In the developing country sites, health benefits and economic benefits were most frequently named. In Egypt and the industrialized country sites, "naturalness" was highly valued, while convenience was mentioned by many women in 6 of the 10 sites. Overall, women in developing country sites saw the positive aspects of full breastfeeding as LAM benefits while women in industrialized country sites were more likely to mention convenience.

Table 10 shows negative features of LAM as reported by study participants. The majority of study participants mentioned no negative features of LAM. Among the few who reported problems, night feeding was mentioned in the industrialized country sites, Egypt and Indonesia; the need for frequent feeding was mentioned in Nigeria and the industrialized countries; and concerns about efficacy were mentioned in Egypt and the industrialized countries.

Participants also were asked about their satisfaction with the breastfeeding practices that are required for LAM use. The majority of LAM users reported no problems with daytime or night-time breastfeeding. Generally, there were significant problems with the need to night feed in the United Kingdom, where full breastfeeding also was a deterrent to recruitment of study participants. In the United States, more women

Table 10. Negative features of LAM—First item mentioned

Site	Night Feeds	No Long Intervals Between Feeds	No Separation from Baby	Baby Suckles More than Usual	Worry About Efficacy of LAM	No Supplements	Nothing	Other
Egypt	5	—	2	—	8	—	37	—
Indonesia	11	—	—	—	—	—	36	11*
Mexico	—	—	—	—	—	—	47	—
Nigeria, Jos	—	—	3	—	—	—	43	6†
Nigeria, Sagamu	—	—	14	15	—	—	16	1
Philippines	—	—	—	—	1	—	40	—
Germany/Italy	2	1	1	—	3	1	33	4
Sweden	2	8	1	—	9	1	23	7
United Kingdom	6	1	1	2	7	2	15	14‡
United States	8	8	3	—	4	7	11	5
Total	34	18	25	17	32	11	301	48

* All of these women said they were "too busy" to breastfeed.
† 3 of these 6 women said they needed to eat more than usual.
‡ 7 of these 14 women felt burdened by the requirement to fill in the diary for the study.

reported problems with having to maintain optimal breastfeeding practices (i.e., no long intervals and only very minimal supplements) than at other sites. Although night-time breastfeeding has been considered as a possible drawback of the method, it was not considered to be a problem by the majority of women who accepted the method and participated in this study. In Egypt and the United Kingdom, only 1 in 4 women reported that night feeding was a problem. These findings are consistent with the high level of continued use at 6 months postpartum.

Discussion

The results of the LAM multicenter study show first that LAM is a family planning method accepted by women from a variety of ethnic, religious, and cultural groups. LAM can be used effectively by a broad range of women in different settings. The second important aspect of LAM explored in this study is the continuation of family planning use after LAM. The study showed that the rate of continuation may depend on prior use of family planning, the strength of the family planning referral system for LAM users, and the level of confidence that women have in the contraceptive efficacy of lactational amenorrhea after 6 months. In several sites, acceptance of family planning was excellent; although it is recognized that family planning use would increase with parity, the significant increases seen here are notable.

Although recall of all of the method criteria was somewhat less than might be hoped, the numbers are similar to those studies of retention of the use criteria for other methods. Additionally, the efficacy of use, satisfaction with the method, and continuation of use were excellent.

The choice of a family planning method after LAM will vary, as it does in any population, with some women choosing less effective methods of family planning. The choice of continuation methods among LAM users should be considered in light of the methods currently in use in the population as a whole. Women who favor a method that is natural and non-invasive may self-select for LAM use, leading to continued reliance on lactational amenorrhea after 6 months.

Satisfaction with LAM generally was high. The answers given to the open-ended item on best and worst features of LAM were interesting, and raise important counseling issues. It is not surprising that women saw child health benefits as a major advantage of LAM. Additionally, their strong recognition of the economic benefits suggests that this may be a selling point for the method. Another issue sometimes raised by family planning experts in industrialized countries is that LAM may impose a burden on women. Evidence suggests that while this is the experience of some women in industrialized countries, it is inappropriate to generalize their experience to women in other countries. This is shown most clearly in the data on convenience and ease of use. These factors were spontaneously mentioned as an advantage of LAM by a high proportion of women in Egypt, the Philippines, Sweden, the United Kingdom, and the United States. Many women noted that LAM was easier to accept and use than an IUD, taking a pill daily, or using condoms. Further, delaying supplementary feeding is seen as saving effort and money among LAM acceptors. It should be noted that these responses were from women who had already accepted LAM and were planning to breastfeed for 6 months.

Many women in developing countries also pointed to the value of LAM in promoting closeness of mother and baby as an advantage of the method. This response was given in Germany/Italy and both Nigerian sites. This benefit in closeness of mother and child suggests another important counseling and, possibly, social marketing feature of the method for some cultural groups.

Conclusion

This study shows that LAM is acceptable and can be used effectively and with satisfaction in many different settings. Taken together with the experience of large-scale family planning programs in countries such as the Philippines and Ecuador,[2,7,8] the conclusion that LAM should be offered alongside other modern methods is justified. LAM, due to its dual benefits for mother and infant (continued family planning and optimal breastfeeding), occupies a special place in many family planning programs that are seeking to integrate cost-effective reproductive health care, while maximizing sustainability.

Questions that remain to be explored include: (1) how to get health workers and policy makers in industrialized countries to realize the benefits of convenience, economics, and health protection for both mother and baby that developing countries readily express; (2) how to interest family planning programs in exploring these social marketing possibilities; (3) how to interest policy makers in publicizing this new method that requires no commodities, particularly in areas where family planning is not as yet fully accepted; and (4) how to support LAM's widespread availability in countries and regions

where contraceptives may be costly and not easily available.

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