

Lactational amenorrhoea method for family planning and women empowerment in Egypt

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ABSTRACT

Introduction: This study aims to assess the potential for the lactational amenorrhoea method (LAM) and passive LAM among women with children below six months of age, and to examine its association with women empowerment in household decisions.

Methods: Data from the Egypt Demographic Health Survey 2000 was downloaded from the Demographic and Health Surveys website. A sub-sample of women fulfilling all four criteria were selected: (1) women whose last birth of children was less than three years ago; (2) currently married; (3) not sterilised; and (4) currently breastfeeding their children. Accordingly, only 3,447 women entered into the statistical analysis, of whom 1,141 had children below six months of age.

Results: Passive LAM users constituted 82 percent of the women who met LAM criteria, 57.1 percent of exclusive breastfeeding mothers, and 32.9 percent of all nursing mothers of children below six months of age. 11.8 percent of women who met the LAM criteria were under double coverage of family planning methods. In the logistic regression model where all variables were adjusted, women empowerment in household decisions, significantly and independently, inversely predicted passive LAM along with increase in child age (Odds-ratio [OR] of 0.86 and 0.43, respectively). Women with higher birth order children were more likely to use passive LAM (OR 1.11).

Conclusion: Women of low empowerment index in household decisions were more likely to use passive LAM. Passive LAM users could be subjected to discontinuation or double coverage of contraceptives.

Keywords: contraceptives, family planning, lactational amenorrhoea method, passive lactational amenorrhoea method, women empowerment

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INTRODUCTION

The choice of a postpartum contraceptive method depends on many factors, including the need for a temporary versus a permanent method, the extent to which informed consent is made prior to delivery, and the infant feeding choice.⁽¹⁾ Lactational amenorrhoea method (LAM) is a family planning option of potential importance in developing countries, including Egypt.^(2,3) However, LAM was untested until 1988, when an international group of researchers met in Bellagio and reached a consensus on the LAM criteria.⁽²⁾ LAM has three elements: (a) full or nearly full breastfeeding; (b) postpartum amenorrhoea; and (c) an infant aged under six months.^(4,5) Khella et al reported a widespread use of what they called “passive LAM”.⁽³⁾ They defined “passive LAM” as women who (a) satisfied the three elements of LAM; (b) did not report use of another method; and (c) did not report relying on prolonged breastfeeding (PBF) as a method of family planning.⁽³⁾

LAM is limited to six months because infant-feeding guidelines recommend that supplementation with other foods should begin at six months.⁽³⁾ The most critical of the LAM criteria is having amenorrhoea, since the end of amenorrhoea indicates a return of ovarian activity.⁽⁶⁾ Ravera et al found that return of menses is irrespective of whether supplements have been introduced and their frequency.⁽⁷⁾ The early introduction of high-calorie liquids or foods, other than breast milk, to infants has been shown to be associated with a shorter duration of amenorrhoea in Bangladesh⁽⁸⁾ and Scotland.⁽⁹⁾ However, in other studies, only bottle-feeding was associated with a shorter duration of amenorrhoea in the United States⁽¹⁰⁾ and the Philippines.⁽¹¹⁾

LAM is unquestionably cost-effective, as breastfeeding alone provides adequate nutrition and fluid intake through the first six months, and breast milk is considered a healthier option than its substitutes for infants in low-resource settings, such as Egypt.⁽¹²⁾ A previous study in Egypt which aimed at analysing

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the acceptance of LAM, proved that the overall post-acceptance satisfaction with LAM was nearly 84%.⁽¹³⁾ Moreover, LAM provides at least equal protection against pregnancy during the first 12 months postpartum than typical modern contraceptive methods.⁽¹⁴⁾ Ramos et al found that the effectiveness of LAM during amenorrhoea was 97% at 12 months postpartum.⁽¹⁵⁾ van Unnik and Roosemalen stated that LAM plays a crucial role in Africa where the average number of children per women is six, and without breastfeeding, the estimated figure would be ten.⁽¹⁶⁾

Egypt still continues to face a high total fertility rate, despite its drop from the years 1995 to 2000.^(17,18) In view of the shrinking global economy, Egypt should be prepared to deal with this problem and to address the issue of women's autonomy or empowerment, which could affect the high fertility rate. Few studies in the Arab world have attempted to evaluate women's empowerment or attitude towards it, and its influence on demographical, social, or health indicators. The majority of these studies tend to focus on the decision-making autonomy and physical autonomy by analysing women's involvement in decision-making at the household level and her freedom of movement.^(19,25) None of these studies investigated passive LAM prevalence nor its association with women empowerment. Therefore, the aim of this study was to assess the potential for LAM and passive LAM among women with children below six months of age, and to examine its association with women empowerment in household decisions.

METHODS

Data from the Egypt Demographic Health Survey in the year 2000 (2000 EDHS)⁽¹⁸⁾ was downloaded on May 17, 2006, free of charge, from the Demographic and Health Surveys website.⁽²⁶⁾ Before downloading the data, the author sought approval to access the datasets. Access was only granted for legitimate research purposes. Secondary in-depth analysis of survey data was conducted. The 2000 EDHS ever-married women's sample comprised 15,773 women. The sample design and detailed study methods and tools of the original study were previously published by El Zanaty and Way.⁽¹⁸⁾ From the 2000 EDHS data,⁽²⁶⁾ a sub-sample of women was selected for the current study. Women fulfilling all four criteria were selected: (1) women whose last-born was less than three years of age; (2) currently married; (3) not sterilised; and (4) currently breastfeeding their children. Accordingly, only 3,447 women entered into the statistical analysis, of whom 1,141 had children below six months of age.

The outcome or dependent variables introduced in the logistic regression analysis in the current study were: amenorrhoea among nursing mothers with children below 36 months of age, exclusive breastfeeding to children below six months of age, nursing mothers currently using

modern methods with children below six months and below 36 months of age, and using passive LAM among mothers with children below six months of age. The independent or predictor variables entered in the different logistic regression models (with slight differences according to the outcome variable in the model) were: age, education, work status, residence, number of living children, age and gender of each child, child birth order, twins or not, wanted child at pregnancy or not, exclusive breastfeeding of the child or not, number of breastfeeding times per day and at night, level of women empowerment in household decisions, husband's education, and husband's attitude towards use of contraceptives by his wife.

Data analysis was conducted using the Statistical Package for Social Sciences for Windows, version 12.0 (SPSS Inc, Chicago, IL, USA). Data are given as unweighted counts, percentages and means. After doing the univariate analysis for the study variables, different logistic regression models were run to get the most significant associated predictors adjusted for each other to the outcome variables aforementioned. The outcome dichotomous variables were coded to 0 and 1. The odds-ratio (OR) which showed the change in the odds of dependent variable(s) when the independent variable(s) changed from 0 to 1 in case of binary independent variables, or the next category or score in case of categorical or continuous variables, were adjusted for other variables in the model. p-value equal or below 0.05 was considered significant in all statistical tests.

RESULTS

The age of the sample population ranged between 15 and 47 years with a mean (SD) of 27.6 (6.1) years. Only 36% of the sample had secondary education or higher, and 11% were working for cash. Nearly 43% of their husbands had secondary education or higher, while 62% were rural residents. About 12% of the women reported that their husbands disapproved of them using contraceptives or at least were unsure about their husband's attitude. Women's empowerment score in household decisions ranged from zero to five with a mean (SD) of three (1.5) decisions. Their mean (SD) number of living children was 2.7 (0.8) children, with a birth order mean (SD) of 3.2 (2.2). Only 1.3% of women had twins in their last birth and 81.5% of them wanted the child when pregnant. About 37.4% of the sample had amenorrhoea. Nearly 58% of nursing mothers of children aged below six months were exclusive breastfeeders, of whom nearly 70% had amenorrhoea. The mean (SD) number of day breastfeeding and night breastfeeding were 5.9 (2.6) and 4.9 (2.2) times, respectively.

Table I shows that 43.3% and 60.1% of the total nursing sample and nursing mothers of children below 36

Table I. Current use of family planning methods by amenorrhoea status of currently married nursing mothers with children aged below 36 months.

Family planning methods	No amenorrhoea		Amenorrhoea		Amenorrhoea with exclusive breastfeeding		Total	
	No.	%	No.	%	No.	%	No.	%
None	628	29.1	459	59	405	79.3	1,492	43.3
Pills	276	12.8	23	3	9	1.8	308	8.9
IUDs	981	45.5	130	16.7	38	7.4	1,149	33.3
Injections	203	9.4	44	5.7	20	3.9	267	7.7
Other modern or traditional methods	48	2.2	9	1.2	2	0.4	59	1.7
PBF	22	1	113	14.5	37	7.2	172	5
Total	2,158	100	778	100	511	100	3,447	100

Table II. Current use of family planning methods by amenorrhoea status of currently married nursing mothers with children aged below six months.

Family planning methods	No amenorrhoea		Amenorrhoea		Amenorrhoea with exclusive breastfeeding (LAM)		Total	
	No.	%	No.	%	No.	%	No.	%
None	124	31.2	187	65.6	375	81.7	686	60.1
Pills	50	12.6	10	3.5	9	2	69	6
IUDs	174	43.8	44	15.4	32	7	250	21.3
Injections	41	10.3	13	4.6	11	2.4	65	5.7
Other modern or traditional methods	5	1.3	6	2.1	2	.4	13	1.1
PBF	3	0.8	25	8.8	30	6.5	58	5.1
Total	397	100	285	100	459	100	1,141	100

months of age reported using no contraceptive method, respectively. However, 57.9% and 81.9% of them had amenorrhoea, respectively. Nearly half of the total sample reported using modern contraceptive methods. Intrauterine devices (IUDs) were the most common method, used by 33.3% of all nursing women. 5% of the total sample reported relying on PBF. 150 (87.2%) of the 172 women reported PBF had amenorrhoea. Disaggregating the data according to the women's status of amenorrhoea and exclusive breastfeeding, it was found that 59% of the non-exclusive breastfeeding mothers who had amenorrhoea reported using no contraceptive method and 14.5% reported reliance on PBF. About 79% of the exclusive breastfeeding mothers with amenorrhoea reported using no contraceptive method and 7.2% reported relying on PBF. For the sub-sample of nursing mothers with children under six months of age, 459 (41.2%) of 1,114 women had the LAM criteria, of whom only 30 women (6.5%) reported PBF as a traditional method of contraception (Table II). Passive LAM users constituted 82% of the women who met LAM criteria, 57.1% of exclusive breastfeeding mothers, and 32.9% of all nursing mothers with children below six months of age. About 11.8% of the women who met the LAM criteria were under double coverage of family planning methods.

Table III. Determinants of use of passive LAM among currently married nursing mothers with children aged below six months (n = 1,141).

Determinant	OR	95% CI
Empowerment in household decisions (RC = 0)	0.860	0.784-0.945
Child age (months)	0.431	0.384-0.483
Birth order of child (RC = 1st)	1.114	1.039-1.194

RC: reference category

Variables associated with passive LAM among mothers with children below six months of age were investigated through bivariate and multivariate analyses. The bivariate analysis shows that the prevalence of passive LAM was inversely related to working women, urban residents, women with husbands of higher level of education, fewer number of living children, women empowerment in household decisions, increase in child age, and lower birth order. Mothers' age, education, attitude of husband towards use of contraception, gender of the child, child being wanted, and twin pregnancy, were not significantly associated with passive LAM. In the logistic regression model where all variables were adjusted to each other, women empowerment in

household decisions, significantly and independently, inversely predicted passive LAM along with the increase in child age (OR 0.86 and 0.43, respectively). Women with higher birth order children were more likely to use passive LAM (OR 1.11) (Table III).

DISCUSSION

This study investigated the LAM and passive LAM among married Egyptian women, and the determinants of using passive LAM, including its independent association with women empowerment in household decisions. Few studies have linked the association of empowerment with family planning and fertility in the Arab world,⁽¹⁹⁻²²⁾ albeit the importance of both. However, the study still has its limitations. First, the nature of the study design is such that causality and/or temporal association could not be established in cross-sectional design. Moreover, questionnaires too, have their limitations. It is also possible that a response to a single question presented in a survey context does not reflect the actual views of these women because there is often discordance between such responses and individual actions. Another limitation is the dearth of research on LAM and passive LAM in the Arab world published in PubMed-indexed journals and the diversity in its methodology and statistical analysis. Finally, although the literature⁽²⁷⁾ shows more components of women empowerment, including economic participation, economic opportunity, educational attainment, political empowerment, and health and well-being, this study only counted on household decision-making as a proxy for women empowerment. Therefore, given the multi-dimensional nature of women empowerment, the author has to admit this limitation. Unfortunately, the 2000 EDHS did not even comprise the module on freedom of movement, thus limiting the analysis in this study.

Despite the proved efficacy of LAM in the first six months of lactation in previous studies, this study showed that nearly 12% of women who met the LAM criteria were under double coverage of family planning methods. Previous analysis of DHS data estimated significant percentages of "double coverage" by both modern contraceptives and lactational amenorrhoea in more than one country.⁽²⁸⁾ This could be attributed to the fact that a part of the women who met the LAM criteria were not aware of its efficacy. A previous survey in Turkey revealed that about half of the women were not aware of the contraceptive effect of breastfeeding, with the lowest knowledge among illiterate women.⁽²⁹⁾ Combined oestrogen/progestin methods should be avoided by all nursing and non-nursing women for two to three weeks to avoid elevating the risk of thromboembolism.⁽¹⁾ Despite 43.3% and 60.1% of the total nursing sample and nursing mothers of children aged below six months, respectively,

reported using no contraceptive method, the majority of them (57.9% and 81.9%, respectively) had amenorrhoea. These findings might support the notion that a part of breastfeeding mothers who reported no contraceptive use were in fact relying on lactational amenorrhoea for birth spacing, including many with children older than six months of age.⁽³⁾ The focus group discussions conducted by Khella et al⁽³⁾ revealed an apparent over-reliance on lactational amenorrhoea, as some participants believed that pregnancy could not occur as long as a woman was breastfeeding, and some reported relying on lactational amenorrhoea for as long as 18 months postpartum.

This study, as well as the previous study by Khella et al,⁽³⁾ who worked on the 1995 EDHS data, showed that only a minority of women reported using PBF as a family planning method (5% and 4%, respectively). However, both studies revealed the prevalence of passive LAM, i.e. 32.9% and 21% of all nursing mothers of children aged below six months in this study and in Khella et al's study, respectively.⁽³⁾ Use of passive LAM among mothers with children aged below six months was inversely associated with working for cash. It could be because LAM can make heavy demands on the women's time, and this association can be reinforced when contrasted with the inclination of educated mothers to use modern methods, as revealed in the results of this study. A lower level of empowerment in household decisions predicted independently and adjusted for women's level of education and her work status, and is directly proportional to a lower use of modern methods and a higher use of passive LAM in this study in multivariate analysis models. Despite adjusting for the husbands' attitude towards contraceptive use, it seems that disempowered women in any of the multi-dimensional aspects of autonomy and empowerment, were helpless in finding the proper reproductive choice concerning their family size and formation. Such a finding is consistent with previous studies in other Arab countries. In Oman, disempowerment predicted high unmet needs for modern family planning methods.⁽²²⁾

To conclude, women of low empowerment index in household decisions were more likely to use passive LAM. Passive LAM use, despite LAM efficiency as an important family planning method, could be subjected to discontinuation or double coverage. Because of the potential acceptability of LAM to Egyptian women, we would like to highlight the need for an educational programme for both the healthcare providers and the nursing women in Egypt, about the criteria for LAM and the necessity for switching to another contraceptive method at six months, or earlier if the LAM criteria has been violated. Such a programme would cover the knowledge gaps and misunderstanding of LAM and would prevent its discontinuation. If the potential of LAM to be a conduit to other modern contraceptive methods

is effectively realised, the method can be profoundly important in family formation. Conversely, LAM has some negative aspects apart from not affording any protection against HIV/AIDS. It requires counselling from a well-informed provider, and it has a high discontinuation rate.^(12,14)

REFERENCES

- Kennedy KI. Post-partum contraception. *Baillieres Clin Obstet Gynaecol* 1996; 10:25-41.
- Canto-de Cetina T, Polanco-Reyes L. [Lactational amenorrhoea as a method of family planning]. *Salud Publica Mex* 1996; 38:58-63. Spanish.
- Khella AK, Fahim HI, Issa AH, Sokal DC, Gadalla MA. Lactational amenorrhea as a method of family planning in Egypt. *Contraception* 2004; 69:317-22.
- The World Health Organization Multinational Study of Breast-feeding and Lactational Amenorrhea. III. Pregnancy during breast-feeding. World Health Organization Task Force on Methods for the Natural Regulation of Fertility. *Fertil Steril* 1999; 72:431-40.
- The World Health Organization Multinational Study of Breast-feeding and Lactational Amenorrhea. I. Description of infant feeding patterns and of the return of menses. World Health Organization Task Force on Methods for the Natural Regulation of Fertility. *Fertil Steril* 1998; 70:448-60.
- Finger WR. Research confirms LAM's effectiveness. *Contraceptive update. Network* 1996;17:12-14,24.
- Ravera M, Ravera C, Reggiori A, et al. A study of breastfeeding and the return of menses in Hoima District, Uganda. *East Afr Med J* 1995; 72:147-9.
- Huffman SL, Chowdhury A, Allen H, Nahar L. Suckling patterns and post-partum amenorrhea in Bangladesh. *J Biosoc Sci* 1987; 19:171-9.
- Howie PW, McNeilly AS, Houston MJ, Cook A, Boyle H. Effect of supplementary food on suckling patterns and ovarian activity during lactation. *Br Med J (Clin Res Ed)* 1981; 283:757-9.
- Campbell OM, Gray RH. Characteristics and determinants of postpartum ovarian function in women in the United States. *Am J Obstet Gynecol* 1993;169:55-60.
- Zohoori N, Popkin BM. Longitudinal analysis of the effects of infant feeding practices on postpartum amenorrhea. *Demography* 1996; 33:167-80.
- Kennedy KI, Kotelchuck M. Policy considerations for the introduction and promotion of the lactational amenorrhea method: advantages and disadvantages of LAM. *J Hum Lact* 1998; 14:191-203.
- Makhlouf AM, Salah M, Shaaban MM, Labbok MH. A clinical study of the lactational amenorrhea method for family planning in Egypt. *Egypt J Fertil Steril* 1997; 1:63-72.
- Kennedy KI, Visness CM. Contraceptive efficacy of lactational amenorrhea. *Lancet* 1992; 339:227-30.
- Ramos R, Kennedy KI, Visness CM. Effectiveness of lactational amenorrhoea in prevention of pregnancy in Manila, the Philippines: non-comparative prospective trail. *BMJ* 1999; 313:909-12.
- van Unnik GA, van Roosmalen J. [Lactation-induced amenorrhea as birth control method]. *Ned Tijdschr Geneesk.* 1998; 142:60-2. Dutch.
- El Zanaty F, Hussein EM, Shawky GA, Way A, Kishor S. Egypt Demographic and Health Survey 1995. Calverton, MD: National Population Council [Egypt] and Macro International Inc, 1996.
- El Zanaty F, Way A. Egypt Demographic Health Survey 2000. Calverton, MD: Ministry of Health and Population [Egypt], National Population Council and ORC Macro, 2001.
- Kishor S, Ayad M, Way A. Women's Empowerment and Demographic Outcomes: Examining Links Using Demographic and Health Surveys Data. Paper presented at the Arab Conference on Maternal and Child Health, Cairo, June 7-10, 1999.
- Al Riyami AA, Afifi M. Determinants of women's fertility in Oman. *Saudi Med J* 2003; 24:748-53.
- Al Riyami AA, Afifi M. Women empowerment and marital fertility in Oman. *J Egypt Public Health Assoc* 2003;78:55-72.
- Al Riyami AA, Afifi M, Mabry R. Women's autonomy, education and employment in Oman and their influence on contraceptive use. *Reprod Health Matters* 2004; 12:144-54.
- Bint Ahmad Jaffer Y, Afifi M. Adolescents' attitudes toward gender roles and women's empowerment in Oman. *East Mediterr Health J* 2005; 11:805-18.
- Jaffer YA, Afifi MM. Adolescent reproductive health and gender roles attitudes in Oman. *Saudi Med J* 2005; 26:234-40.
- Al-Riyami A, Afifi M, Morsi M, Mabry R. A national study of gynecological morbidities in Oman: Effect of women's autonomy. *Saudi Med J* 2007; 28:881-90.
- MEASURE DHS. Demographic and Health Surveys. Available at www.measuredhs.com/login.cfm. Accessed August 20, 2006.
- Nawar L. Women's autonomy and gender roles in Egyptian families: implications for family planning and reproductive health. In: CDC 25th Annual Seminar, 1995. Cairo, Egypt: Cairo Demographic Center, 1996: 173-209. Cairo Demographic Center Research Monograph Series No 25.
- Hight-Laukaran V, Rutstein SO, Labbok MH, Ballard E. Contraceptive use during lactational amenorrhea. *Int J Gynaecol Obstet* 1996; 54:101-8.
- Vural B, Vural F, Erk A, Karabacak O. Knowledge on lactational amenorrhoea and contraception in Kocaeli, Turkey. *East Afr Med J* 1999; 76:385-9.