Transition from the Lactational Amenorrhea Method to other modern family planning methods in rural Bangladesh: Barrier analysis and implications for behavior change communication program intervention design

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ABSTRACT

The timely transition from Lactational Amenorrhea Method (LAM) to another modern family planning method contributes to healthy spacing of pregnancies by increasing the adoption of family planning during the first year postpartum. Yet, literature suggests challenges in completing a timely LAM transition. To guide program implementation in Bangladesh, this study identified factors influencing women’s transition decisions.

Eighty postpartum women, comprising 40 who transitioned from LAM and 40 who did not, participated. Half of each group participated in in-depth interviews to explore the decision-making process. All participants responded to a “Barrier Analysis” questionnaire to identify differences in eight behavioral determinants.

More than half of transitioners switched to another modern method before or within the same month that LAM ended. Of the 18 transitioners who delayed, 15 waited for menses to return. For non-transitioners, key barriers included waiting for menses to return, misconceptions on return to fertility, and perceived lack of familial support. The LAM transition can help women prevent unintended pregnancy during the first year postpartum. Increased emphasis on counseling women about the risk of pregnancy, and misconceptions about personal fertility patterns are critical for facilitating the transition. Strategies should also include interventions that train health workers and improve social support.

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1. Introduction

Family planning is widely acknowledged as essential in any strategy aimed to improve maternal and child survival. Research suggests that thirty-two percent of maternal deaths and ten percent of childhood deaths could be averted if couples used family planning in countries with high total fertility rates (Cleland et al., 2006). Programs have historically highlighted family planning for its role in preventing unintended pregnancies to improve maternal health; however, evidence also shows that family planning leads to improved health outcomes for children, largely through its

2 The lactational amenorrhea method, also known as LAM, is a modern, temporary contraceptive method based on natural infertility resulting from patterns of breastfeeding.

3 In this article, these women are referred to as “transitioners,” which is defined as women who transitioned from LAM to another modern contraception method.

4 In this article, these women are referred to as “non-transitioners,” which is defined as women who did not transition from LAM to another modern contraception method.

5 In this article, these women are referred to as “delayed transitioners,” which is defined as women who delayed the LAM transition beyond the month during which the first criteria changed.
emphasis on optimal birth-to-pregnancy spacing. Recent studies have suggested that birth-to-pregnancy intervals of 24 months or less are associated with increased risk of poor perinatal, neonatal, child, and maternal health outcomes, including increased risk of prematurity, low birth weight, neonatal mortality, and stunting in children (Maternal, Infant and Young Child Nutrition and Family Planning Working Group, 2011; Rustine, 2005).

Despite the compelling evidence for the benefits of family planning, many countries continue to experience challenges in effectively addressing unmet need for contraception. Available evidence suggests that factors which influence contraceptive uptake include lack of access to services (Robey, Rustine, & Morris, 1993), insufficient knowledge of modern contraceptive methods (Konje & Ladiho, 1999), fear of side effects, as well as socio-cultural factors such as social or familial disapproval (Bongaarts & Bruce, 1995) and child marriage (Kamal, 2012), among others. According to Wambui and Akehagen (2009), economic capability influenced perception of contraception among men with low income status.

Globally, the unmet need is particularly high in the year following birth (Ross & Winfrey, 2001). Ross and Winfrey further reported that the proportion of women 0–12 months postpartum with unmet need for family planning ranged from 54% in Latin America, 62% in Asia, and 74% in Sub-Saharan Africa. Pregnancies that occur in the first year postpartum are more likely to have adverse outcomes for the mother and baby; therefore, addressing unmet need in this period is vital for any maternal and child health strategy.

The Lactational Amenorrhea Method, also known as LAM, is a modern, temporary contraceptive method based on natural infertility resulting from patterns of breastfeeding. Since the 1990s, research on LAM has steadily grown, showing its efficacy and effectiveness as a method for pregnancy prevention. Results from clinical trials indicate that LAM is at least 98% efficacious when the woman adheres to three criteria: she is fully or nearly fully breastfeeding, she is postpartum amenorrheic, and she is less than six months postpartum (Labbok et al., 1997). When one of the three criteria is not met, the woman is advised to return to a health provider and immediately start using another contraceptive method.

There is strong rationale for including LAM as a component of postpartum family planning programming, notably its effectiveness, availability for immediate use after delivery, contribution to a wider method mix, child survival benefits from its linkage with exclusive breastfeeding, and maternal health benefits. The method has also been cited as an introductory method, or a “gateway method” to other family planning methods during postpartum period. The use of LAM by previous non-users of family planning can serve as an entry point for facilitating discussion and subsequent use of other methods, thereby extending the total duration of modern contraceptive use. As such, the timely transition from LAM to other contraceptive methods is strongly emphasized by its proponents. When a woman is no longer eligible to use LAM, ideally she will have already selected her next method, thereby increasing the likelihood that she will begin using the next method immediately with no gap in effective protection against pregnancy.

While there are many benefits of LAM as a contraceptive method, an effective transition to another modern contraceptive method is critical for protecting LAM users against unplanned pregnancies during the postpartum period. In controlled settings, two-thirds of women who use LAM transition to another modern method effectively (Peterson et al., 2006); however, studies also suggest that a variable proportion of women – between 48% and 86% – that use LAM successfully transition to another contraceptive method, indicating some challenges within the transition period (Hight-Laukaran et al., 1997; Labbok et al., 1997; Peterson et al., 2000). Delays in transition have been attributed to waiting for menses to return in programs (Bongiovanni et al., 2005) and other studies (Salway & Nurani, 1998). Health providers who refuse to provide contraceptive methods until menses returns may serve as another barrier to the LAM transition (Stanback & Reynolds, 2002). Although the available literature suggests that women face challenges in achieving a smooth and timely transition, less is known about the factors that influence women’s decision to transition to another method of contraception.

Sylhet division in Bangladesh has experienced moderate declines in fertility and increases in family planning indicators. The total fertility rate in Sylhet division declined from 4.2 in 2004 to 3.1 in 2011 and current contraceptive use (any method) increased from 22% to 45% in the same period (National Institute of Population Research and Training (NIHORT), Mitra and Associates, and ORC Macro, 2005; NIHORT, Mitra and Associates, MEASURE DHS, ICF International, 2011). Nevertheless, Sylhet division has not achieved progress in family planning indicators commensurate with Bangladesh as a whole.

Globally, there is a substantial unmet need for contraception in the first year following delivery. A secondary analysis of 2004 and 2007 Bangladesh Demographic Health Survey data (Borda M, Winfrey W, McKaig C, Futures Group, Washington, DC, Jhpiego, Baltimore, Maryland, personal communication, May 3, 2010) found that unmet need for family planning is high among all Bangladeshi women during the first year postpartum, with 49.6% having unmet need between delivery and 12 months. Duration of breastfeeding is long; however, the duration of exclusive breastfeeding is low and sharply declines in the first six months postpartum (NIHORT, Mitra and Associates, Macro International Inc., 2009). Data also indicates increases in sexual activity during the three- to six-month postpartum period. In the first six months postpartum, 88% of women resume sexual activity; this percentage increases steadily through the first year, totaling about 93.7% of women at 12 months postpartum (Borda, Winfrey, & McKaig, 2010). This data suggests that the period when women should transition from LAM coincides with the timeframe that many women are, often unknowingly, at risk for pregnancy.

In this context, the Healthy Fertility Study (HFS) was designed with the aim to: (a) design and test an integrated service delivery approach in Sylhet District, Bangladesh; (b) assess the strengths and limitations of integrating family planning into an ongoing community-based maternal and newborn health care program; and (c) assess the impact of a community-based integrated family planning and maternal and newborn health intervention package (Ahmed et al., 2013). The subject of this paper is a sub-study within the HFS, which aimed to identify and gain further insight into the factors affecting women’s decisions to transition from LAM to other modern methods of contraception in selected sites in Sylhet District. Understanding the barriers and factors that facilitate the transition will offer an important opportunity to reduce the risk of unintended pregnancies during the first year postpartum. In consideration of Sylhet’s rural context, where there is an unmet need for contraception and a demand for community-based health care services, the results of this study were intended to help inform the strengthening of the intervention package within the HFS, with the potential for scale up throughout Bangladesh and use in other low-resource countries.

2. Methodology

The HFS has been following a cohort of 4504 women in four intervention unions (union is lowest administrative unit with average 20,000 population and a first level health center) and four control unions in Sylhet District from pregnancy to 36 months.
postpartum using cross-sectional data collection at pregnancy and three, six, 12, 18, 24, 30, and 36 months postpartum.

As part of the intervention package, community health workers, young women with a minimum of a grade 10 education, were trained to visit households every two months to conduct pregnancy surveillance. CHWs visit women during the antenatal and postpartum periods and provide education about basic maternal and newborn care and complementary information on postpartum family planning, including the promotion of LAM and exclusive breastfeeding, benefits of birth-to-pregnancy intervals of at least 24 months, risks of closely spaced births, and the return to fertility after delivery.

The LAM Barrier Analysis was conducted as a sub-study within HFS. Participants were selected from the HFS intervention group and screened to determine whether they were a “LAM user”, defined as a woman who could name the method, received LAM counseling, recalled at least two criteria of LAM, and reported use; those who were not LAM users were determined ineligible for participation. Eighty LAM users were subsequently divided based on their LAM transition status. One group (n = 40) consisted of “LAM transitioners”, defined as women who reported (1) changing from using LAM to another modern contraceptive method after one of the three LAM criteria was not met and, (2) changing to another method no earlier than three months postpartum. The second group (n = 40) consisted of “LAM non-transitioners”; defined as women who reported using LAM for three months or more and did not change from LAM to another method after one of the three LAM criteria changed. Among the LAM transitioners and non-transitioners, half were “high-purity”, defined as three or more children, and half were “low purity”, defined as one or two children, to ensure that a range of barriers were identified. Husbands and mothers-in-law of 10 transitioners and 10 non-transitioners were interviewed to explore social support. Whenever possible, the husband and mother-in-law of the same postpartum woman were interviewed.

Half of the respondents from each group (i.e., 20 LAM transitioners and 20 LAM non-transitioners) participated in in-depth interviews designed to explore the decision-making process influencing the use of LAM and the transition (Yount and Gittelsohn (2008)). Domains of inquiry included: breastfeeding practices and experiences, decision-making related process to LAM use, and the transition to another modern method.

All respondents participated in a Barrier Analysis interview (Davis, T. Barrier analysis facilitator’s guide: a tool for improving behavior change communication in child survival and community development programs, reprint 2010, Washington, DC: Food for the Hungry, http://barrieranalysis.fhi.net). The questionnaire, a rapid assessment tool rooted in the Health Belief Model and the Theory of Planned Behavior, is “…used in community health and other community development projects to identify behavioral determinants associated with a particular behavior so that more effective behavior change communication messages and support activities (e.g., changing social norms) can be developed… Barrier Analysis can be used at the start of a behavior change program to determine key messages and activities for intervention. It can also be used in an ongoing program focusing on behaviors that have not changed very much (despite repeated efforts) in order to understand what is keeping people from making a particular change.” (p.1) Questions are designed to collect data to compare individuals that engage in a behavior (“Doers”) with individuals that do not (“Non-doers”) vis-à-vis behavioral determinants. Comparing the differences between doers and non-doers for each determinant is utilized to pinpoint the most important behavioral determinants. Odds ratios and the corresponding uncorrected p-values are calculated to determine how many times more likely it is that “doer” identifies a behavioral determinant as compared to a “non-doer” (or the converse). p-Values of less than 0.05 means are used to differentiate statistically significant behavioral determinants to be addressed via program interventions. In this study, semi-structured questionnaires based on the Barrier Analysis methodology were used to identify key differences between transitioners and non-transitioners relative to nine behavioral determinants: perceived susceptibility to pregnancy; perceived severity of closely spaced births; perceived efficacy of timely transition for spacing/prevention of unintended pregnancy; perceived social acceptability of the transition; perceived self-efficacy (LAM the transition); cues to transition; perception of divine will; and positive and negative attributes of the transition.

This paper presents findings that are drawn from the in-depth interviews and barrier analysis to elucidate the key factors influencing women’s decisions to transition, which can be used to refine program intervention strategies, behavior change messaging or potential audiences to target. The protocol was approved by the Bangladesh Medical Research Council’s National Research Ethics Committee and the Johns Hopkins School of Public Health’s Institutional Review Board.

3. Results

3.1. Participants’ characteristics

LAM transitioners and non-transitioners were similar in terms of average age, number of pregnancies, number of living children, number of male or female children, desire for more children, economic status, and religion. Transitioners had higher average years of completed schooling (5.7 years versus 3.1 years in non-transitioners), were less likely to work outside of the home (10.0% versus 22.5% respectively), and desired to wait slightly longer after the previous birth until the next pregnancy (42.9 months versus 38.4 months).

Duration of LAM use was determined based on the postpartum month when the first criterion of LAM changed. LAM use ended on average 5.7 months postpartum and 5.5 months postpartum for LAM transitioners and non-transitioners, respectively. At the time of the interview, more LAM transitioners had resumed menses (80% compared to 32.5%) and had babies older than six months (97.5% compared to 80.0%) than non-transitioners. On average, LAM transitioners reported switching to another modern contraceptive method at 6.2 months postpartum.

3.2. Knowledge of LAM and the LAM transition

Of the 40 non-transitioners, 36 (90%) recalled the amenorrhea criterion, compared with all 40 (100%) of the transitioners. Having a baby less than six months was the criterion most frequently forgotten by non-transitioners and transitioners, with 40% of non-transitioners recalling this criterion compared to 55% of transitioners (Table 1).

In response to the open-ended question “what have you learned about switching from LAM to another modern method?”, four
specific aspects or topics of LAM transition knowledge were identified: knowledge to switch to another method when LAM ends, reference to one or more criteria as a cue to transition, specific knowledge of other modern methods, and knowledge of the return to fertility. Fifty percent of transitioners cited “when LAM ends, switch to another method” compared with 15% of non-transitioners. Twenty two percent of non-transitioners did not know about the need to switch to another modern method when one of the criteria changed compared to 0% of the transitioners.

3.3. Transitioners

3.3.1. Timing of transition and cue to action

Participants were asked the month that they transitioned to another method. Among the 40 transitioners, 18 (45%) waited one or more months after one of the LAM criteria was not met before changing to another contraceptive method. Twenty-two transitioners switched before or within the same postpartum month when one of the LAM criteria was not met; three (13.6%) transitioned before and 19 (47.5%) within the same month. Analysis was conducted to ascertain whether a specific criterion served as a cue for women to transition. Of the 22 transitioners who adopted a method either before or as soon as the criteria changed, eight transitioned before menses returned. Of the 18 transitioners who delayed a month or longer after criteria changed, only three transitioned before menses return, while 15 (83%) waited for menses. In total, among the 40 transitioners, only 11 transitioned before menses resumed.

3.3.2. Method use after LAM

Of the 20 LAM transitioners that participated in in-depth interviews, eight women switched to condoms, eight to combined oral contraceptives, and four to injections as their next method of contraception. Seven women obtained methods from NGO sources and six obtained methods at a pharmacy. Nine reported that their husbands retrieved methods for them, six reported obtaining methods independently, and two reported obtaining the method together with their husband.

3.3.3. Motivation to transition

Myriad reasons were provided during in-depth interviews regarding the impetus to transition from LAM to another method. The most commonly reported was a desire to delay or space the next pregnancy, followed by a perception of fertility return and fear of becoming pregnant, desire to limit, and desire to protect mother and child's health.

3.3.4. Profiles of transitioners

Of the 20 transitioners that participated in the in-depth interviews, two women adopted a method before criteria changed and reported fear of pregnancy before menses return; one attributed the concern to light (breakthrough) bleeding, and the other reported that she knew of a neighbor who became pregnant before menses return. Ten adopted methods when the first criterion changed. Of those, five transitioned before menses resumed, with four of those women reporting they did not want more children as well as a fear of pregnancy before menses return.

Eight transitioners who delayed adopting a method one month or more were interviewed; menses had not resumed for any of the women. The interviews of seven suggested that they had knowledge of when to transition, but delayed the transition until menses resumed. More specific reasons cited included: forgot/meant to obtain a method but only did so once menses returned; husband away/abroad; and cannot obtain injection without menses. All were aware that LAM had ended.

“The community mobilizer told me pills protect me from unwanted pregnancy and that would be good for me … My husband and mother-in-law suggested to me to take another method, because after completing LAM even without menstruation I may become pregnant. But I forgot these things and I started taking pills after my menses returned … After completing LAM even without menses, I may become pregnant, so I was a little bit scared when I forgot to take a method when I started giving extra food to my child.” (delayed transitioner, low-parity, 10 months postpartum)

“When my child is too young, if I got pregnant once again that would be dangerous for me. My husband was out of the home for five months after my child was born and he returned after eight months. Then my menses also returned, so I took the injection.” (delayed transitioner, low-parity, 11 months postpartum)

3.4. Non-transitioners

Among the 20 non-transitioners that participated in in-depth interviews, seven reasons were cited as the major reason for not transitioning: nine reported waiting for menses to resume, three reported concerns about side effects, two reported beliefs about their own natural fertility patterns that were not related to menses, two reported financial concerns, two reported lack of permission from husband or mother-in-law, one reported husband away/living abroad, and one desired a girl. Of the nine women who reported they were waiting for menses to return, four based their decision on previous experiences with return to fertility after a pregnancy.

“My mother-in-law suggested to me not to conceive any more children and if I want to get a method, then I should go to Shimantik [NGO clinic] or any doctor to get a method. However, my husband does not want that. I cannot take a decision without my husband. Still I did not tell anything to my husband, because I am waiting for my menses to return. Without menstruation, I will not get pregnant. I know that, because I have five children and never got pregnant without menstruation. So I decided when my menses returns, then I will discuss taking a method with my husband.” (non-transitioner, high-parity, six months postpartum)

“I have my own assumption, without menses return I never got pregnant. So when menses will return, I will take a method.” (non-transitioner, high-parity, 10 months postpartum)

“If not anyone wants any more babies within two years then she needs to take a method … My personal experience says that my menses will not come within three years after delivery. It has happened for me for every child. Without menses, I’ll not become pregnant.” (non-transitioner, high-parity, 10 months postpartum)

Four heard or believed that menses was necessary before obtaining a method, and one first-time mother believed that menses had to return before a woman could become pregnant.

“After the end of LAM, I went to a health facility to get an injection, but they said before menses return, they will not give me an injection. They also said that now I can take pills [but I don’t want to take pills]. I don’t want any more babies … My husband and I decided when menses returns, I’ll take an injection.” (non-transitioner, high parity, eight months postpartum)
Of the three women who reported concerns about side effects, all knew that they should transition, but had experienced or observed others’ experiences with side effects, particularly with injections and intrauterine devices, which affected their decision to use other methods.

Table 2 shows key differences in behavioral determinants between transitioners and non-transitioners, as identified through the Barrier Analysis methodology. Transitioners were significantly more likely to perceive that they could become pregnant if they did not switch to another contraceptive method when one of the three criteria changes compared to non-transitioners: 100% versus 83% for menses return, 90% versus 55% for introduction of other food, and 93% versus 53% for baby older than 6 months, respectively. Transitioners were more likely to perceive the importance of switching to another modern method when the baby was introduced foods (78% compared with 48%) and when the baby was older than six months (83% compared with 55%). Of note, findings also revealed that transitioners were more likely to perceive the advantages of spacing on child health (68%), whereas a lesser proportion of non-transitioners perceived the advantages (45%). Non-transitioners were more likely to perceive that they were only at risk for pregnancy one year or more after a delivery, if not using LAM or another FP method, in comparison with transitioners, 12.5% versus 37.5%, respectively. In the words of one non-transitioner with four children in an in-depth interview, “I do not know about others, but for me, I become pregnant one year and five months after a birth.” Non-transitioners were less likely to perceive that they would have social support for using another contraceptive method, particularly from the husband. Sixty-three percent of non-transitioners reported perceived support from the husband in comparison to 98% of transitioners. Non-transitioners were more likely than transitioners to perceive side effects as a barrier, 38% compared to 18%, respectively.

4. Discussion

In comparison to national rates in Bangladesh, Sylhet Division experiences a high unmet need for family planning and a low proportion of women who practice longer intervals or healthy spacing of pregnancies. LAM offers many benefits during the first year postpartum, including maternal and child health survival advantages. To reap the full benefits of this modern family planning method, the timely introduction and use of another method must be facilitated by health care providers and programs; however, there is a paucity of existing data regarding the factors that facilitate or discourage the transition. Addressing these barriers can help to ensure that women seamlessly transition from LAM to another modern family planning method, thereby helping to address the need for healthy spacing of pregnancies. In-depth interviews provided insights about how women’s decision-making processes related to the transition. The barrier analysis methodology was utilized to differentiate the most important barriers to the transition. Findings from both informed recommendations for program interventions, messaging, and identification of additional audiences to consider in support of LAM users’ transition to other modern contraceptive methods.

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Transitioners n=40 (%)</th>
<th>Non-transitioners n=40 (%)</th>
<th>Difference</th>
<th>Odds ratio</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptions of the timing of their personal risk for pregnancy after a birth</td>
<td></td>
<td></td>
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<tr>
<td>LAM users who said</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can only become pregnant if do not use LAM or a FP method more than 1 year after delivery</td>
<td>5 (12.5)</td>
<td>15 (37.5)</td>
<td>-25%</td>
<td>4.20</td>
<td>0.010</td>
</tr>
<tr>
<td>Perceived vulnerability to pregnancy when each criteria changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Thinks she can become pregnant if do not switch from LAM to another method when MENSES RETURNS</td>
<td>40 (100.0)</td>
<td>33 (82.5)</td>
<td>18%</td>
<td>0.0</td>
<td>0.006</td>
</tr>
<tr>
<td>Thinks she can become pregnant if do not switch from LAM to another method when INTRODUCES OTHER FOODS</td>
<td>36 (90.00)</td>
<td>22 (55.0)</td>
<td>35%</td>
<td>0.14</td>
<td>0.001</td>
</tr>
<tr>
<td>Thinks she can become pregnant if do not switch from LAM to another method when BABY &gt; 6 MONTHS</td>
<td>37 (92.5)</td>
<td>21 (53.5)</td>
<td>40%</td>
<td>0.09</td>
<td>0.000</td>
</tr>
<tr>
<td>Perceived importance of switching to another method when each criteria changes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Very important to switch to another method to delay a pregnancy WHEN INTRODUCES OTHER FOODS</td>
<td>31 (77.5)</td>
<td>19 (47.5)</td>
<td>30%</td>
<td>0.26</td>
<td>0.005</td>
</tr>
<tr>
<td>NOT very important to switch to another method to delay a pregnancy WHEN BABY &gt; 6 MONTHS</td>
<td>0 (0.0)</td>
<td>10 (25.0)</td>
<td>-25%</td>
<td>N/A</td>
<td>0.001</td>
</tr>
<tr>
<td>Perceived social acceptability of the transition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When any one of the 3 criteria changes, she thinks most of the people that she knows approved/would approve of her transitioning</td>
<td>38 (95.0)</td>
<td>31 (77.5)</td>
<td>18%</td>
<td>0.18</td>
<td>0.023</td>
</tr>
<tr>
<td>Who would support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband</td>
<td>39 (97.5)</td>
<td>25 (62.5)</td>
<td>35%</td>
<td>0.04</td>
<td>0.000</td>
</tr>
<tr>
<td>CHW</td>
<td>30 (75.0)</td>
<td>20 (50.0)</td>
<td>25%</td>
<td>0.33</td>
<td>0.021</td>
</tr>
<tr>
<td>Who would not support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband</td>
<td>0 (0.0)</td>
<td>10 (25.0)</td>
<td>-25%</td>
<td>N/A</td>
<td>0.001</td>
</tr>
<tr>
<td>Mother-in-law</td>
<td>1 (2.5)</td>
<td>6 (15.0)</td>
<td>-13%</td>
<td>6.88</td>
<td>0.048</td>
</tr>
<tr>
<td>No one</td>
<td>33 (82.5)</td>
<td>20 (50.0)</td>
<td>33%</td>
<td>0.21</td>
<td>0.002</td>
</tr>
<tr>
<td>Advantages of the transition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spacing can improve child health</td>
<td>27 (67.5)</td>
<td>18 (45.0)</td>
<td>23%</td>
<td>0.39</td>
<td>0.043</td>
</tr>
<tr>
<td>Disadvantages of the transition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side effects</td>
<td>7 (17.5)</td>
<td>15 (37.5)</td>
<td>-20%</td>
<td>2.83</td>
<td>0.045</td>
</tr>
<tr>
<td>None</td>
<td>33 (82.5)</td>
<td>23 (57.5)</td>
<td>25%</td>
<td>0.29</td>
<td>0.015</td>
</tr>
</tbody>
</table>
Our findings reveal that there are a number of factors that impact the transition from LAM to another modern method. The resumption of menses was arguably the most important cue influencing timing. Among the non-transitioners who participated in in-depth interviews, almost half reported that they were waiting for menses to return before initiating contraception. Furthermore, among the 18 transitioners who delayed a month or longer after the criteria changed, 15 waited for menses. The entrenched nature of this perception of the return of menses vis-à-vis fertility can also be observed in the reports of delayed transitions from in-depth interviews. These non-transitioners who delayed contraception uptake and the transitioners who waited to switch to another method until menses return both have an increased risk of unintended pregnancy, which should be considered in services or programs reaching women during this period.

Various reasons were identified regarding why women wait for the return of menses prior to adopting a method; one of the most frequently reported was women’s experience with their return to fertility after a previous pregnancy. In addition, it was noted that several women held the belief that the return of menses was necessary to obtain a method. These findings are consistent with other studies conducted in Bangladesh, suggesting that women’s personal reproductive experiences, and the experiences of their family, are key indicators of the risk of pregnancy (Salway & Nurani, 1998).

In addition to menses resumption and perceptions around the return to fertility, other identified barriers to a timely transition included concerns about side effects of contraception and a perceived dearth of social support surrounding the adoption of a modern method.

Globally, the impact that social and cultural barriers have on women’s utilization of health services is well documented. Husbands, elder family members, and mothers-in-law are often influential and have substantial decision-making power over whether a woman can access health services outside the home; this influence is extended to reproductive health decisions, such as contraception and family size. Formative research conducted prior to the design of this study revealed that in some cases, even if a woman wants to use a family planning method, she may face resistance from her husband. The study team is cognizant of the consequential role that husbands and mothers-in-law often play in women’s health and the design has taken into account achieving a delicate balance of targeting educational messages to women, as well as their support persons and community members. The latter is primarily achieved by conducting mobilization meetings at the community level to reinforce key postpartum family planning messages among family members and community leaders. However, based upon our findings, additional consideration should be given to further enable husbands and mothers-in-law to support and encourage women in the transition to improve maternal and neonatal health outcomes.

Another finding related to the effect of familial support was the report that some women either delayed or did not complete the transition because their husband was away or abroad and were not sexually active. This finding reflects the husband’s influence in contraceptive use, which is rooted in traditional cultural practices and gender norms; if the husband is away, it may be socially and culturally unacceptable for the woman to use a method of contraception. If the couple elects to begin or transition to another method when the husband returns to the household, there is a risk

## Table 3

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<tr>
<th>Barriers identified</th>
<th>Recommendations</th>
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| Waiting for menses before using a method, based on previous personal experiences with return to fertility | Current message  
Remain careful, because you can become pregnant again sooner than you want. If you do not only breastfeed your baby, your ability to become pregnant again can return 45 days after you have delivered your baby. Your fertility may return before your next menses.  
Message to add  
The time when a woman can become pregnant again after a delivery varies for each one of her pregnancies. You cannot predict fertility based on previous experiences.  
You can begin a method (injections and pills) even before your menses resumes.  
Intervention to add or revise  
Testimonials from women in the community who became pregnant before menses during community meetings.  
Include new message that emphasizes not waiting for menses to return before using a method, or transitioning to another modern method, within HFS CHW and Family Welfare Visitor trainings |
| Misconceptions about timing of risk of pregnancy after a delivery if not using LAM or another FP method | Intervention to add  
Include counseling on LAM transition during household visits between 6 and 12 months to facilitate delayed transitioners to switch to other methods; Begin the session by asking the mother directly when she thinks she is at risk for becoming pregnant.  
Messages to add during later visits  
LAM is a short-term, temporary contraceptive method that can only offer protection up to six months. You are no longer protected from pregnancy by LAM.  
When a woman can become pregnant again after a delivery varies for each one of her pregnancies. You cannot predict fertility based on previous experiences.  
Even if your menses has not returned switch to another modern method for healthy spacing of your next pregnancy or protection from an unplanned pregnancy. |
| Concerns about side effects                                                          | Current intervention  
Community health workers to be sure to counsel about managing side effects during distribution of condoms and combined oral contraceptives or refer her to a health worker for further explanation. |
| Perceived lack of social support from husbands and mothers-in-law                   | Current intervention  
Participation of influential men and women including husbands and mothers-in-law community meetings.  
Interventions to add  
Reinforce participation in community mobilization.  
Provide additional information to husbands and mothers-in-law about when mothers should transition, side effects and how to support mothers in the transition.  
Explore ways to improve couples communication. |
of unintended pregnancy if the couple resumes sexual activity before the method has been initiated. Developing specific culturally acceptable messages to this sub-group of women would be beneficial to address this period of risk when the husband returns.

Finally, the study identified a sub-category of transitioners, “delayed transitioners” or women who delay the transition one or more months after the first LAM criteria changes. For the purposes of this study, all LAM users who had transitioned at the time of the study were classified as LAM transitioners, regardless of when they had transitioned. LAM users who had not transitioned at the time of the study were defined as non-transitioners. This approach was utilized as little data was available on how long after the first criterion changes do LAM users typically switch to another contraceptive method. Through the in-depth interview process, it was discovered that many women intended to transition, but had delayed until menses returned. This has important implications for messaging as well as classifying LAM transitioners in future studies.

Restricted mobility of women outside the home can be a barrier to accessing family planning services and commodities; in Bangladesh, governmental family welfare assistants have helped to address this barrier through door-step delivery of contraceptives (Simmons, Baqee, Koenig, & Phillips, 1988). One interesting finding from this study is that of the women who obtained contraceptives, husbands retrieved the methods in the majority of cases. Following the completion of this study, the HFS incorporated household distribution of contraceptives by CHWs, including contraceptive pills, condoms, and injectables, in the intervention package. It is anticipated that the integration of this contraceptive provision will increase convenience and expand women’s accessibility to methods.

This study utilized in-depth interviews and Barrier Analysis methodology to explore the decision-making processes and barriers related to the LAM transition. As with most qualitative research, findings are transferrable but not generalizable to other populations. The HFS presented a specific setting for examining these issues: a maternal newborn health program implemented in a religiously conservative, Muslim society. However, cultural beliefs around breastfeeding, sexual activity, and the return to fertility that influences the LAM transition often vary. Similarly, the roles of various individuals (e.g., husbands, mothers-in-law) in providing social support for spacing, breastfeeding, and family planning use will differ at a country or regional level. As such, exploring these issues in additional country contexts is critical for identifying a more comprehensive understanding of the LAM transition process.

5. Conclusions

Our findings have identified some important factors that facilitate or hinder the transition from LAM to another contraception method and that will be considered in the adaptation of study counseling messages and educational materials and may have application for other settings. Firstly, there is a need to counsel women about the risk of pregnancy during the extended postpartum period, even during postpartum amenorrhea, and the importance of using LAM or another method for protection. Counseling should also emphasize that menses is not needed to obtain a method (Salway & Nurani, 1998), as this belief was also identified. This should be addressed not only in the counseling messages provided to women, but to health providers (i.e., Family Welfare Visitors) as well. The identified factors that enabled the successful transition from LAM to another modern method can be utilized to promote a successful transition in others in the community by serving as messages to counteract the key barriers. Thus, we recommend that the identified motivators be interwoven in study educational messages delivered by the CHWs and the “LAM Ambassadors” – who serve as role models for the successful adoption of LAM – to diffuse these facilitating factors to women and their support persons in their community. Additional information on the pregnancy risk after LAM, the timing of transition, side effects and how to support mothers would be advantageous to emphasize the community mobilization meetings.

The factors identified that facilitate or hinder the transition from LAM to other modern contraception methods, as well as the recommended refinements to address the barriers, can help facilitate healthy spacing of pregnancies and reduce unwanted pregnancies, particularly in the first year postpartum. While these findings are particular for the sub-districts of Sylhet in Bangladesh where the study was conducted, the barriers and motivators can be explored elsewhere in Bangladesh and other countries to enhance programming that facilitates a smooth transition from LAM to another method of contraception.

6. Lessons learned

This study offered some lessons learned and recommendations that were specific to the intervention package of Healthy Fertility Study in Sylhet, Bangladesh. However, key ingredients were identified for a successful transition from LAM to other modern methods, along with key barriers, that can be extended to other countries and contexts that aim to reduce unintended pregnancies in the first year postpartum within a community-based maternal, newborn and family planning program (Table 3).

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