



ENGAGING FAMILIES FOR HEALTHY PREGNANCIES

A Focused Desk Review of Knowledge, Attitudes and Behaviors Related to Pregnancies in Three High-Risk Situations: Advanced Maternal Age; High Parity; and Rapid Repeat Pregnancies after Abortion or Miscarriage



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ACRONYMS

Advanced Maternal Age	AMA
Demographic and Health Survey	DHS
Family Planning	FP
Healthy Timing and Spacing of Pregnancies	HTSP
Heavily Indebted and Poor Countries	HIPC
High-Parity	HP
Key Informant	KI
Long-Acting Reversible Contraception	LARC
Permanent Methods (of contraception)	PMs
Population Level Behavior Change	PLBC
Post-Abortion	PA
Post-Abortion Care	PAC
Post-Abortion/Post-Miscarriage	PA/PM
Rapid-Repeat Pregnancy	RRP
Sexually Transmitted Infection	STI

INTRODUCTION

Family planning (FP) interventions are implemented worldwide with the common goal of decreasing unintended pregnancies and improving reproductive health and development outcomes. . Although many family planning programs promote birth spacing, Healthy Timing and Spacing of Pregnancy (HTSP) emphasizes the role of spacing between *pregnancies*, rather than births, and highlights the impact on maternal and child health, particularly related to high-risk pregnancies -- those that occur before the age of 18, after the age of 34, are too closely spaced, or are high-parity. HTSP helps prevent adverse maternal, perinatal and neonatal health outcomes, such as increased risk of stillbirth, prematurity, low birth weight and neonatal mortality, as well as maternal mortality, pre-eclampsia, induced abortion and miscarriage.

An evidence review was conducted in 2013 as part of the Population Level Behavior Change (PLBC) Evidence Summit convened by USAID and UNICEF. This review analyzed evaluations of interventions designed to help women achieve HTSP, focusing on four key behaviors:

1. Delaying first pregnancy until at least 18 years of age
2. Waiting at least 24 months after a live birth before attempting a pregnancy
3. Waiting six months after an induced abortion or miscarriage before attempting a pregnancy
4. Avoiding pregnancy after age 34

Findings from the review highlighted key gaps in research and interventions related to post-abortion/miscarriage rapid repeat pregnancies and advanced maternal age (AMA). The present review was undertaken to identify existing research and interventions focused on these high-risk pregnancies, as well as on high-parity (HP) pregnancies, defined as those in women who have already had at least five live births.

Research on health outcomes shows AMA is associated with an increased likelihood of a number of adverse maternal and fetal outcomes, including, but not limited to: pre-term or still-birth, abnormal (low or high) birth weight, fetal distress, maternal hemorrhage, maternal mortality, and some congenital birth defects (Kenny et al, 2013; Astolfi and Zonta, 1999; Rajmohan et al, 2013; Walfish et al, 2009; Jacobsson et al, 2013; World Health Organization, 2014). HP pregnancy is also a risk factor for maternal hemorrhage, as well as low birth weight, and pre-term delivery (Walfish et al, 2009; Aliyu et al, 2005).

After a miscarriage or abortion, inter-pregnancy intervals of fewer than six months has been associated with increased risks of maternal anemia, low birth weight, and pre-term delivery (Conde-Agudelo et al, 2005; Post, 2009). Some debate remains in the literature as to the magnitude and mechanisms of maternal and neonatal morbidity and mortality for pregnancies that do not meet the HTSP recommendations.

This review is not intended to enter that ongoing debate, but rather to start with the assumption that such pregnancies are high risk, and look at factors that may lead to pregnancies in these situations in developing countries. The main research question was: *What are the risk and protective factors associated with a woman becoming pregnant (i) after age 34, (ii) after having had 5 or more live births, or (iii) within six months of an abortion or miscarriage?* The factors were expected to fall into one of the following categories:

- a. Risk perceptions of AMA, HP, and PA/PM pregnancies;
- b. Fertility desires of AMA, HP, or PA/PM women and their families, and attitudes towards the use of family planning methods to achieve these desires;
- c. Attitudes of women and their families towards AMA, HP, or PA/PM pregnancies.
- d. Family planning behaviors of AMA and HP women at risk of pregnancy, or PA/PM women at risk of a rapid repeat pregnancy (RRP).

In this review, the high-risk pregnancy is conceptualized as the outcome of interest, or the dependent variable. In this framework, the independent variables are those associated with a higher incidence of high-risk pregnancies. Some of these independent variables may be demographic, such as education or socioeconomic status.

Some are biomedical, such as a woman's obstetric history, or contraceptive failure, which is related to method choice. Some of the independent variables are behavioral, such as failure to adopt a contraceptive method or discontinuation of contraceptive use. The behavioral variables generally have social or contextual drivers such as desired or expected family size, spousal approval of FP, remarriage, desire for sons, or acceptance of long-term or permanent FP methods.

METHODS

Peer-reviewed and gray literature documents were identified through database searches, and were included if they had not been reviewed in the draft PLBC evidence review. Additional inclusion criteria were:

Time: January 1, 1998 through 2013

Language: French or English

Country: focused on countries designated as Heavily Indebted Poor Countries (HIPC), low-income, or lower middle income by the World Bank (see Annex A)

Content: specifically addressed knowledge, attitudes and behaviors related to AMA, HP, or PA/PM pregnancies

Level: focused on women, families, and caregivers rather than at the community or policy level

However, given the very limited number of studies that precisely met the inclusion criteria, some studies were retained that did not meet all criteria. Two studies were included that did not meet the country criteria with data from Turkey and the United States. Very few of the papers met the criterion of “specifically addressed knowledge, attitudes and behaviors related to AMA, HP, or PA/PM pregnancies”; other studies included some attention to the drivers as a secondary or even incidental focus, and so were included in the review.

Initial data sources included: references of the papers listed in the PLBC evidence review; databases of peer-reviewed literature (PubMed, PsycInfo, Sociological Abstracts, CINAHL, Cochrane reviews); other databases such as Popline and WHOLIS, as well as Google Scholar; clearinghouse websites including the Media/Materials Clearinghouse, Health Compass, Communication initiative; and websites of relevant organizations such as FHI 360, International Planned Parenthood Federation, Marie Stopes International, Population Council, and Pathfinder International.

The initial searches yielded 1,380 results. These were reviewed by title to identify potentially relevant documents. Retained titles were then reviewed at the abstract level to identify key documents. References of the key documents were also reviewed to locate additional resources. A total of 28 documents were retained.

Additionally, 13 key informants (KIs) were contacted, eight of whom were ultimately interviewed (See Annex B for details).

RESULTS

OVERVIEW

As noted above, very few papers identified in this review explicitly met the inclusion criteria; the review found that these topics have simply not been studied, and have not been a focus of HTSP interventions. By contrast, appropriate spacing after a live birth and delay of first pregnancy until age 18 are very thoroughly studied and have been the focus of the vast majority of HTSP interventions, in part as a result of findings from a WHO Technical Consultation on Birth Spacing in 2005 that put forth recommendations for birth spacing after a live birth and after an abortion, but did not touch upon AMA or HP pregnancies (WHO, 2005).

A number of KIs suggested that this gap is because the HTSP approach to promote FP was designed in part as an alternative to messages about limiting family size, which is seen as a politically and culturally sensitive topic in some settings. On a more practical level, many more pregnancies can be affected with a focus on younger and low-parity women simply because those groups are having the majority of babies.

In the absence of direct data, the review tended to look at studies that were tangential to the main topics. As a result, an exhaustive review based on database searches alone was difficult. For example, a few of the studies on outcomes of non-adherent pregnancies included some data or speculation on the reasons for the non-adherent pregnancy, but these were difficult to identify through the search methodology because they often did not appear in the abstract.

Therefore, KIs and snowball techniques were more fruitful. It is likely that some relevant data exists in other related studies, but finding them would require a more intensive review of separate bodies of literature, as suggested below under “Further Research.”

Findings of the review are divided into two main sections below. The first presents results according to category of high-risk pregnancy: advanced maternal age (AMA); high parity (HP); and post-abortion/post-miscarriage rapid repeat pregnancy (PA/PM RRP). The second section presents results by cross-cutting themes.

Because the categories of pregnancies discussed in this review are highly culturally and context-specific, and because of the paucity of broader evidence/information, results are mostly presented by specific study. This is to preserve country-specific factors being discussed, and to refrain from generalizations being made from the limited amount of information available. The discussion section aims to synthesize major findings and key recommendations for further study.

CATEGORIES OF HIGH-RISK PREGNANCIES

ADVANCED MATERNAL AGE

This review identified only one study that directly addressed drivers of AMA pregnancy. Although this study was from the US, it was retained as the only major study that addressed AMA. A few outcome studies, detailed below, briefly and tangentially addressed the reasons for AMA pregnancy.

In *"Are They Still Having Sex?: STIs and Unintended Pregnancy Among Mid-Life Women"* (Sherman et al, 2005), the authors noted a "lack of attention to the needs of women in this age range by public health advocates and health care providers, and a dearth of interventions addressing their unique characteristics and circumstances."

The authors found no empirical studies on sexually transmitted infection (STI)/pregnancy prevention interventions designed for midlife women, and note that programs on reproductive health for women over 40 focus almost exclusively on the transition to menopause. The authors cite some factors that place women at higher risk for STIs and unintended pregnancy in midlife. Relationship factors may include separation, divorce, and widowhood, leading to new relationships and/or remarriage. New sexual relationships may involve new decisions regarding contraceptive methods and STI prevention, and require new skills such as use of a male or female condom, diaphragm, or oral contraceptives. The authors report that women seem to have a poor understanding of pregnancy risk during peri-menopause, and do not understand that one potential meaning of missed periods during peri-menopause is pregnancy.

This study is relevant since it addresses contraception issues for older women, but its applicability to HTSP in developing countries is limited for two reasons: one, older women in the United States are unlikely to be under the same pressure to have more children late in their childbearing years, whereas this is a concern in developing countries where remarriage may bring expectations to bear children with their new husband. Second, the authors do not precisely define "midlife," and one might expect the needs of women in the younger range, from 35-40, to be different from those approaching menopause, and may be different from perceptions of "midlife" in developing countries.

In a study from Nigeria, Olusanya and Solanke (2012) note that childbearing over age 34 "is underpinned by a constellation of voluntary and involuntary factors that include but are not limited to late (re)marriage, delayed conception from infertility, academic and career pursuits, desire for large family, lack of or ineffective family planning and longer life expectancy." In developing countries, late childbearing is more likely to result from factors such as poverty, lack of or ineffective family planning, and cultural disposition towards large family size, they write.

One KI noted that in settings where long-acting reversible contraceptives (LARC) and permanent methods (PMs) are either unavailable or unacceptable, contraceptive failure can be the cause of

many unintentional AMA and HP pregnancies. This issue is discussed in more detail below under cross-cutting themes.

In Tanzania, one study found a significant increase in deliveries in the 35-50 age range from 2005 to 2011 at Muhimbili National Hospital (MNH), a figure that reflects the overall trend in the country (Muganyizi & Balandya, 2013), but did not examine the drivers of AMA pregnancies. In another study based at MNH, Muganyizi and Mageta (2013) found poorer adherence to HTSP recommendations among women over age 29. In this study, outcomes of interest were healthy spacing of pregnancies, and healthy timing of first pregnancy, defined as first pregnancy at age 18-30. Women who had had previous pregnancies were asked about the timing of their *first* pregnancy to determine whether their first pregnancy occurred between the ages of 18-30, regardless of their age or parity at the time of the study. Non-adherence to the age 18-30 recommendation was 7.6 times more likely among women older than 29 and 4 times more likely among primigravidae. Somewhat surprisingly, use of modern FP was not associated with either healthy timing of first pregnancy or healthy spacing of pregnancies.

The Muganyizi and Mageta study did not distinguish between women age 30-34 and those 35 or older, so did not directly address AMA. However, the authors conclude that “findings suggest that modern FP in Tanzania is partly used to fulfill unhealthy reproductive preferences... This confirms that there are other factors that are given more priority when considering inter-pregnancy spacing than just healthy outcomes of pregnancy.” The study did not address what those factors might be. One of the study’s authors was interviewed as a KI and speculated that some women are postponing marriage and/or first pregnancy for education or career priorities.

Other women may be delaying sexual debut in line with recommendations designed to prevent HIV infection. However, he said, delayed childbearing can conflict with the continuing desire for large families; in the 2010 Tanzania Demographic and Health Survey (DHS), the stated ideal family size was 4.9 children for women and 4.8 for men. The author suggested that as a result, women who start their families later cannot achieve their desired family size if they adhere to HTSP recommendations, and so put themselves at risk by spacing pregnancies too closely, or continuing childbearing after the recommended age. Additionally, it was noted that women can be influenced by societal pressures rather than health concerns. “They are thinking of belonging to the community, because if you deliver too few children, you don’t belong,” the KI said.

HIGH PARITY

References to high parity (also known as grand multiparous) pregnancies are relatively rare in the HTSP literature. Discussions with KIs highlighted that HTSP was deliberately designed to replace the idea of limiting family size with the notion of spacing, which is more acceptable in many contexts. As a result, HTSP interventions avoided discussions of high parity out of concern that it would be seen as synonymous with limiting, or may be seen as coercive. Issues of limiting versus

spacing are very context-specific, with some cultures convinced of the need for smaller families, and others still indicating a desired family size of four or five children, or even more.

For example, in Niger, the 2012 DHS found that the ideal stated number of children was 9.2 among women and 10.5 among men. On the other hand, two KIs commented that even in some African countries the idea of limiting family size has become more mainstream. The question as to whether limiting might now be a more acceptable discussion in some places would be an important topic for future research.

One of the few studies identified for this review that specifically addressed HP was from Nigeria (Kuti, Dare & Ogunniyi, 2001). The study identified six main categories of reasons for the pregnancy: desire for large family; child’s death; mistake (did not use modern contraception for religious or cultural reasons, disapproval, fear of side effects); gender (desire for male); remarriage; and, failed contraception. The relative importance of the reasons varied according to the woman’s number of living children, but desire for more children and child death were the most common reasons. The mean age of grand-multiparous women was 37.4.

More recently, a study in Bhopal, India, primarily focused on outcomes of HP pregnancies but also asked about the reasons for the index pregnancy. Among 232 grand-multiparous women surveyed in a hospital, 71% were aware of FP but were not using it “because of their social and religious taboos” (Sultan & Ojha, 2013). The mean age was 30.9 years, and 81.8% of the women were 35 or younger. The reasons given for the index pregnancy are shown in the table below:

Reason	Number of Cases	Percentage
Desire for male child	153	47%
Husband and in-laws wish	81	25%
Loss of previous child	46	14%
Conceived by mistake	35	10.7%
Failed contraception	12	3.6%
Total	327	100%

The reasons given are similar to those found by Kuti and colleagues in Nigeria, although notably “desire for a large family” was not explicitly mentioned; this may have something to do with the difference in ideal family size norms between Nigeria in 1999 (6.2 for women and 7.8 for men, according to the 1999 Nigeria DHS) and India in 2011 (2.3 for women and men, according to the 2005-06 India DHS). Sultan and Ojha state that the majority of the women in their sample were “poor, overworked and tired,” and malnourished because of poverty and the need to feed their large families.

They add: “Early marriages, concept of large family... craving for a male child and lack of source of recreation are quite prevalent in our country which contributes to grand multiparity at a lower age.” They recommended that grand-multiparous women should be better educated about the

benefits of antenatal care and FP and “should be convinced regarding adoption of sterilization to limit their family planning and thereby avoid disastrous effects of high parity.”

A recent study in Nepal documented social pressure to have large families, even among women who say they want a small family (Jennings & Barber, 2013). The study showed that although 73% of the individuals surveyed reported that two children is their ideal number, about half of the married women had more than two children and it appeared that neighbors’ family size preferences have significantly influenced progression to larger families among women, even independent of their own preference. Older women were more influenced by neighbor’s family size as compared to younger women; the authors suggest older women may be more susceptible to social pressure because they have had fewer opportunities or reasons to venture outside of their neighborhoods.

Interviews with KIs revealed speculations that HP may be driven by inadequate knowledge or use of FP; high infant and child mortality; men building prestige by marrying many wives and having many children; desire for sons; lack of recreational activities in rural areas; remarriage after divorce or widowhood, placing women under pressure to bear children for their new husband and, in polygamous unions, competition among co-wives to bear many children.

POST-ABORTION/POST-MISCARRIAGE RAPID REPEAT PREGNANCIES

Post-abortion/post-miscarriage rapid repeat pregnancies are defined in the HTSP model as pregnancies that occur less than six months after a miscarriage or induced abortion. This review found many studies about contraceptive counseling following abortion, but these generally focused on the safety, acceptability and effectiveness of providing FP immediately after an abortion or post-abortion care, and not on the appropriate interval until the next pregnancy. Although no studies found addressed the six-month interval, some of the findings on post-abortion counseling provide some useful information.

For example, a study from Egypt noted there are structural barriers to FP counseling immediately after an abortion (Youssef, Abdel-Tawab et al, 2007). In many countries, family planning services are administratively and physically separate from post-abortion care (PAC) facilities. The study also found that PAC providers were not well informed about FP; only about a third of providers mentioned that all post-abortion patients should be offered FP counseling or that all FP methods could be used by post-abortion patients.

Providers also did not believe clients would accept FP, and the study does note some client obstacles to accepting FP before discharge, including desire for more children, concern about method side effects, and need for husband approval. The following table details post-abortion patients’ reaction to receiving family planning methods in the ward:

Statement	Percent of women who agreed with statement (N=292)
I would feel more comfortable since the doctor would know about my health status	67.1
It would save me time of going elsewhere to receive a FP method	45.2
It would be a burden for me to return to the hospital for follow up on the method	54.8
This would help me use the method at the right time	62.3
I would not be able to make the right decision when I'm in the hospital	58.9
My husband would be upset with me if I accept FP	87.7

A report of a successful pilot intervention in Kenya where FP was provided immediately post-abortion found an unanticipated benefit to offering services on the gynecological ward: male involvement in FP was increased (Solo et al, 1999). At baseline, 41% of women were accompanied to the hospital by their husbands or partners, and in interviews, these men expressed a desire to learn more about FP. As a result, the staff took the opportunity to counsel couples together about FP when the husband was present, if the woman agreed. The sample of men was not representative, however, as the men involved had already shown some interest by coming to the hospital with their wives or partners.

One KI cautioned against assuming that post-abortion and post-miscarriage patients have similar needs and concerns, since induced abortions end unwanted pregnancies, while many miscarriages end pregnancies that were wanted. Post-miscarriage women who lose a desired pregnancy may be more likely to want to conceive again soon. Post-abortion patients would be expected to be highly motivated to accept FP to avoid another unwanted pregnancy, but barriers still exist, such as those documented by Youssef and colleagues in Egypt. In addition, some post-abortion patients, especially young and unmarried ones, may decline FP because they are determined to remain abstinent. Successful interventions would need to carefully consider the differences between the two populations in order to address the primary motivations and barriers of each.

CROSS-CUTTING THEMES

A number of studies and KIs raised issues that are not specific to any of the high-risk pregnancy situations detailed above, but are nonetheless important to consider when designing interventions to prevent these high-risk pregnancies.

METHOD MIX: LONG-ACTING AND PERMANENT METHODS OF CONTRACEPTION

Several KIs suggested that existing interventions promoting the use of LARC and PMs could provide useful formative data for addressing AMA and HP. If older and HP women – and their partners – could be encouraged to use LARC or PMs, the risk of pregnancy due to contraceptive failure or discontinuation could be greatly reduced, eliminating one driver of HP and AMA pregnancies. Studies on discontinuation of temporary contraceptive methods could provide useful information for the same reason. Older women may also be confused about the risks of pregnancy during peri-menopause, and a Nigerian study found a sharp decrease in contraceptive use close to menopause (Ogbonna, 2006).

One KI stated that ensuring that LARC and PMs are part of the available contraceptive method mix would be essential to reducing HP and AMA pregnancies by helping couples end childbearing once they have reached their desired family size. Many family planning programs, including those using the HTSP model, tend to focus on the availability, affordability and acceptability of products such as pills or condoms. This is to say that contraceptive security programs focusing on commodity supply chain and/or logistics will most likely deal primarily with short-term methods. LARC and PMs call for a more clinical approach and so depend on different kinds of systems, such as training, health infrastructure, and human resources.

Given the importance of LARC and PMs in reducing AMA and HP pregnancies, the literature and interventions focusing on these methods may provide useful information. For example, a paper from the ACQUIRE Project (Escandón et al 2006) provides qualitative data on attitudes towards limiting in a community in Guinea. In this very traditional setting, spacing pregnancies was well accepted; several male focus group participants noted that women could agreeably limit family size by waiting three to five years between pregnancies. However, it was considered objectionable for a woman to end childbearing unless she had experienced a difficult delivery or pregnancy.

Another KI noted that in Bangladesh, too, the notion of limiting family size is accepted: the total fertility rate is 2.3. However, even though many women complete their desired childbearing by their mid-20s, the majority of the methods they use are temporary because LARC and PMs are expensive and not well accepted, leading to problems of method failure and discontinuation. Many women with unintended pregnancies after they have completed their desired childbearing undergo “menstrual regulation” to terminate unintended pregnancies – referring to a procedure that uses manual vacuum aspiration to safely establish non-pregnancy after a missed period (Guttmacher Institute, 2012).

Given the low fecundity of peri-menopausal women, interventions focused on this segment of the AMA population would prevent relatively few pregnancies. However, interventions promoting LARC and PMs for men and women who have completed their childbearing would also benefit peri-menopausal women.

POSTPONEMENT: A NEW TYPE OF FERTILITY TRANSITION?

In a 2012 paper, Moultrie and colleagues analyzed birth-interval dynamics in 24 African countries using DHS data, and found “a distinctive and previously undocumented pattern of childbearing that is prevalent across sub-Saharan Africa.” The authors suggest that the lengthening of birth intervals varies little by woman’s age or parity, and that in some countries the longer birth intervals cannot be explained by birth spacing based on the woman’s youngest child. “Rather, women are postponing births for other reasons,” they wrote.

They argue that postponement—delaying the next birth for reasons other than the age of the youngest child—is a third type of strategy that should be considered alongside spacing and stopping. “If birth intervals are changing in a way that is not mediated by parity, this suggests that limitation of family size is not a primary consideration in women’s family-formation strategies,” they argue.

Moultrie and colleagues did not posit reasons for this pattern, but they cite Johnson-Hanks (2007) who argues, based on ethnographic research, that much African reproductive behavior is characterized by postponement, which is a third strategy that is not intermediate, but different from that seen in other fertility transitions, developed in the face of adversity and unpredictability, adding that “factors that might lead women to want to delay becoming pregnant might include concerns about relationship stability, their own and others’ health, money, and housing.”

Nevertheless, it is unclear how the distinction between spacing and postponement—which seems quite technical—might affect the way interventions should be developed. For example, women who are postponing births may push their next pregnancy into the over-34 age range, and understanding reasons for postponement independent of parity may provide some clues as to how to discourage HP births. If the fertility transition in Africa is somehow qualitatively different than that predicted by “classic” population theory, researchers and developers of interventions should be wary of making assumptions based on these theories or based on the nature of transitions in other locations. This line of research should, at minimum, be monitored for its implications for HTSP interventions, and certainly points to the need for context-specific formative research to inform intervention design.

MALE INVOLVEMENT IN FP

The value of involving men in FP discussions is well documented in the literature, especially given the strong influence of male approval on women’s FP decisions. Also recognized is the generally low involvement of men in FP interventions. Two studies identified in this review, however, specifically detail the effect of age on male involvement, including the age of the man and of the woman, and the age difference between them. These studies could be useful in designing HTSP interventions aimed at older and HP women.

A study from Turkey is notable in that it addressed age-specific family planning use among men, which included methods used by their partners (Kisa, Zeyneloglu & Delibas, 2013). The authors found that men 40 years old and over used FP methods more often than men in their 20s, and that men aged 20-29 with five or more children used FP more than those in the same age group with fewer than five children. The use of modern methods increased as both age and duration of marriage increased. The study also examined some reasons men gave for not using family planning; these included desire for more children or for more sons, belief that using FP was a sin, and misconceptions about side effects of FP methods for women. The authors concluded that age-specific FP programs targeted at men could contribute to efforts to increase contraceptive prevalence.

An analysis of DHS data by Gebreselassie and Mishra (2007) found that older women, men over 45, and a 5-year-plus age gap were all associated with disagreement within couples on FP in the ten countries studied. The study found that FP issues were discussed more frequently among couples where the wife is 15-34 years old, compared to couple where the wife is 35-49 years old. The husband's age also influenced spousal communication; "in most of the countries, the proportion of couples in which both partners discussed family planning issues declines with increasing age of the husband." In addition, the number of living children had a strong positive influence on joint approval of FP couples' discussion of FP in most cases. The authors suggest that more discussion in couples with larger families indicates a latent demand for fertility control.

NORMATIVE SHIFTS

As mentioned above, several KIs noted that since HTSP was in part designed as an alternative to messages about limiting family size, discussions of HP and AMA were generally avoided. One KI suggested that the current discussion is simply a matter of "the pendulum swinging back" to a focus on limiting. This characterization may be somewhat inaccurate because HTSP's focus is on the health benefits—for mothers, children, and families—of following the recommendations for timing and spacing. Nevertheless, programmers designing interventions focused on HP and AMA will need to acknowledge that messages about HP, and to a lesser extent AMA, may be construed as promoting limiting, and that this may have unwelcome connotations in some contexts.

Two KIs, however, suggested that in some places discussions of family size have become more mainstream and more accepted in the past five to ten years. This has been the case in India and Bangladesh for some time. One KI said that especially in some urban populations in Africa, people are very verbal and open about the need for smaller families, though barriers remain to providing the appropriate method mix—including LARC and PMs—needed to ensure that these intentions can be realized. A KI acknowledged that while limiting is not given much weight if a woman is healthy, "we should not be shy about talking about this. We need to address it." Messages about HP births should be based on strong evidence, he said, and focused on ensuring the health of the child and the mother.

DISCUSSION

HTSP interventions have up to now been primarily focused on younger women who are in their most active childbearing years. These are the women who account for the majority of pregnancies, so encouraging them to wait until at least age 18 before starting their families, and then advocating ample spacing between pregnancies, can have a significant effect on fertility rates. However, the demonstrated risk of AMA and HP pregnancies demands that interventions be extended to cover women who are further along in their reproductive years.

However, this review revealed that the FP needs of older and high-parity women have received scant research attention worldwide. While many studies have explored the outcomes of pregnancies among women in these situations, as well as the possible mechanisms of adverse outcomes, very few researchers have examined *why* women become pregnant beyond age 34, or when they already have five or more children. Descriptive data from some settings show that family planning is more common among older and higher-parity women, but the reasons for this are not explored. Any interventions aimed at reducing these high-risk births would need to be based on a firm understanding of why the pregnancies occur. The review also did not uncover any studies that examined provider attitudes and behaviors towards AMA and HP pregnancies and the specific counseling that they provide.

Behavioral drivers for AMA or HP pregnancies that did emerge shared some similarities but differed by country context. Some women said they were hoping for a son, or another son; others spoke of family and spousal pressure to have large families, or their own desire for a large family. Others drivers included the death of a child; remarriage leading to the desire to have children with the new husband; contraceptive failure; religious or cultural prohibitions on use of contraception; or discontinuation of contraception for various reasons.

Some simply said the pregnancy was “by mistake.” In some cases, the problem is a lack of appropriate and acceptable LARC and PMs for women who have decided not to have any more children. However, additional context-specific formative research would need to be done to gauge the relative importance of those reasons in a given setting, and to identify any additional reasons specific to AMA and HP women.

Secondarily, while a number of studies and interventions have focused on the FP needs and interventions for post-abortion women, the review found no interventions that specifically focused on the recommended timing of the next pregnancy post-abortion. Even less attention has been paid to the spacing recommendations for post-miscarriage women, and the challenges in encouraging women who lose a wanted pregnancy to wait the recommended 6 months before attempting to become pregnant again.

RECOMMENDATIONS FOR ADDITIONAL STUDY

Given the lack of specific information on this topic, the need for additional research is considerable. Several KIs simply said we need more formative research, especially qualitative studies, to better understand why women are continuing to have children despite the health risks: Is it a knowledge gap? Cultural pressure? Unacceptability or poor access to appropriate FP methods? The need for in-depth research is complicated by the fact that such questions can be very context specific, varying by country, religion, ethnicity, and other intrinsic factors.

While this review focused more on the perceptions, desires and behaviors contributing to AMA, HP and PA/PM pregnancies, several KIs suggested other existing bodies of literature that may contain useful information relating to *interventions* for these high-risk pregnancy categories. Some have already been noted above. These include:

- **Literature and programmatic information on LARC and PMs.** These are ideal methods for older and high-parity women who have achieved their desired family size.*
- **Information on contraceptive discontinuation.** Many women say they do not intend to have any more children, but discontinue contraception for a variety of reasons. This can also be an issue for peri-menopausal women, although as noted above there has been little research on this, even in developed countries.
- **Studies and programs directly aimed at limiting**, i.e., those that preceded the HTSP model or did not use it. One caveat is that norms and attitudes about FP can change rapidly and in ways that vary by context, so older studies would need to be approached with caution.
- **Literature on outcomes of AMA, HP and PA/PM high-risk pregnancies.** As noted before, some studies include data on the reasons for the index pregnancy. Unfortunately, since this is often a minor result that is rarely reported in an abstract, it would require in-depth review of entire articles.

In addition to overall formative research focused on AMA, HP and PA/PM pregnancies, the review identified a number of specific questions for research:

- Is limiting family size a more acceptable message in some places than it was in the past?
- What are some reasons for delaying or postponing child-bearing, which can push childbearing into the riskier age range after age 34? What is the effect of educational or

* Some existing communications interventions recommended by a KI and related to permanent methods can be found at: www.youtube.com/watch?v=vnmPKpGmY0s; www.youtube.com/watch?v=2yYHWz9BTFQ; www.youtube.com/watch?v=5mgvStVsBko.

career pursuits, adversity, poverty, the cost of caring for children, etc., independent of desire for a particular family size?

- What are the implications for HTSP interventions of the findings that the fertility transition in Africa may be markedly different than in other places, with postponement emerging as a strategy distinct from spacing or stopping?
- What is the effect of male involvement, and particularly the age/life stage of a male partner, on desires for limiting family size, or preventing high-risk pregnancy in general?
- How do women, men, and communities perceive the risk of AMA and HP pregnancies? Are they aware of the increasing risk of morbidity and mortality as a woman's age and parity increase? To what degree are grand multiparous women overconfident that their previous uncomplicated deliveries ensure continued safe motherhood?
- How well do women understand how fertility changes throughout their childbearing years? Do they understand the timing of return of fertility after delivery, abortion or miscarriage, and do they understand that they remain at risk of pregnancy as they approach menopause?
- What are the dynamics of family, neighborhood and community pressure to have larger families? What are the characteristics of women and couples who have successfully adhered to HTSP recommendations despite these pressures?
- What are the differences between post-abortion and post-miscarriage women? How should each group be approached to encourage healthy spacing of the next pregnancy?
- In a given setting, do women have access to the appropriate method mix for different stages of their reproductive life? Are LARC and PMs available, affordable, and acceptable?

In "The Dangerous Multipara," a 1934 paper in *The Lancet*, Bethel Solomons warns against overconfidence when a multiparous women is pregnant or in labor. "My object in writing this paper and giving it a sensational title is to remove if possible, once and for all, from the mind of the reader the idea that a primigravida means a difficult labour but a multipara an easy one," he wrote. "It is altogether a mistake to suppose that in childbearing, practice makes perfect." Eighty years later, it's past time for families, communities, clinicians and public health programmers to give equal attention to the reproductive health needs of older, more experienced mothers.

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ANNEX A: COUNTRIES INCLUDED IN REVIEW

The following countries are designated by the World Bank as Heavily Indebted Poor Countries (HIPC); low income; and/or lower middle income.

1	Afghanistan	29	Guyana	57	Papua-New Guinea
2	Armenia	30	Haiti	58	Paraguay
3	Bangladesh	31	Honduras	59	Philippines
4	Benin	32	India	60	Rwanda
5	Bhutan	33	Indonesia	61	Samoa
6	Bolivia	34	Kenya	62	Sao Tome and Principe
7	Burkina Faso	35	Kiribati	63	Senegal
8	Burundi	36	Korea, Dem. Rep.	64	Sierra Leone
9	Cambodia	37	Kosovo	65	Solomon Islands
10	Cameroon	38	Kyrgyz Republic	66	Somalia
11	Cape Verde	39	Lao PDR	67	South Sudan
12	Central African Republic	40	Lesotho	68	Sri Lanka
13	Chad	41	Liberia	69	Sudan
14	Comoros	42	Madagascar	70	Swaziland
15	Congo, Dem. Rep.	43	Malawi	71	Syria
16	Congo, Rep.	44	Mali	72	Tajikistan
17	Cote d'Ivoire	45	Mauritania	73	Tanzania
18	Djibouti	46	Micronesia.	74	Timor-Leste
19	Egypt	47	Moldova	75	Togo
20	El Salvador	48	Mongolia	76	Uganda
21	Eritrea	49	Morocco	77	Ukraine
22	Ethiopia	50	Mozambique	78	Uzbekistan
23	Gambia	51	Myanmar	79	Vanuatu
24	Georgia	52	Nepal	80	Vietnam
25	Ghana	53	Nicaragua	81	West Bank and Gaza
26	Guatemala	54	Niger	82	Yemen
27	Guinea	55	Nigeria	83	Zambia
28	Guinea-Bissau	56	Pakistan	84	Zimbabwe

Source: <http://data.worldbank.org/country>, accessed Nov. 27, 2013

ANNEX B: KEY INFORMANTS

1 Cicely Marston

Department of Social Science and Medicine, Imperial College London, UK

2004: "The effects of contraception on obstetric outcomes"

Marston, C. (2006). Report of a WHO Technical Consultation on Birth Spacing: Geneva, Switzerland 13–15 June 2005, World Health Organization: 37.

Status: Responded by email with some information.

2 Projestine S. Muganyizi

Department of Obstetrics & Gynecology, Muhimbili University of Health and Allied Sciences

2013: "Pregnancy outcomes in the extremes of reproductive age: A seven-year experience in Tanzania"

Status: Interviewed in person Dec. 19, 2013

3 Christy A. Sherman

Oregon Research Institute, Eugene, OR

Sherman et al 2005: "Are They Still Having Sex?" STIs and Unintended Pregnancy Among Mid-Life Women

Status: Said she no longer does this research; suggested her co-author Marie Harvey would know more.

4 Marie Harvey

Associate Dean for Research and Graduate Programs, Professor of Public Health
College of Public Health and Human Sciences, Oregon State University

Status: Declined, saying it is not her area of expertise.

5 William Jansen

2004: USAID Programmatic Review on Birth Spacing

Status: Contacted, but unable to schedule interview.

6 May Post, MD

Senior Advisor for Reproductive Health and Family Planning, ESD

Mainstreaming Healthy Timing and Spacing of Pregnancy: A Framework for Action

Status: Responded by email with some information.

7 Kristen Stolka

RTI International (formally Project Officer for ESD HTSP activities at Pathfinder International)

Status: Interviewed by phone Dec. 20, 2013

8 Shabana Sultan

Grand multiparity still an obstetric challenge, Journal of Evolution of Medical and Dental Sciences 2013

Status: Interviewed by phone Jan. 20, 2014

9 Dr. Cat McKaig, JHPIEGO, MCHIP

Status: Interviewed by phone Jan. 3, 2014

10 Julie DaVanzo, RAND Corporation

2008: The effects of pregnancy spacing on infant and child mortality in Matlab, Bangladesh: How they vary by the type of pregnancy outcome that began the interval

Status: Interviewed by phone Dec. 24, 2013

11 Mizanur Rahman

Senior Research Associate-Bangladesh, Carolina Population Center, University of North Carolina

2008: The effects of pregnancy spacing on infant and child mortality in Matlab, Bangladesh: How they vary by the type of pregnancy outcome that began the interval

Status: Interviewed by phone Jan. 2, 2014

12 Laili Irani

Senior Policy Analyst, Health Policy Project, Population Reference Bureau

Status: Interviewed by phone Jan. 2, 2014

13 Jane Wickstrom

Technical Team Leader, RESPOND Project, EngenderHealth

Status: Interviewed in person March 6, 2014