Seeking the Story:
Can Abortion Narratives Be Retrieved from a Mixed-Methods Study in India?

Kerry LD MacQuarrie, University of Washington and The Futures Institute
Jeffrey Edmeades, International Center for Research on Women

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Corresponding author: Kerry MacQuarrie, kerry10@uw.edu

ABSTRACT

Researchers implemented a mixed-methods research project in Madhya Pradesh, India in 2002-2003 to obtain improved data on abortion, other reproductive events, and the gender context in which they occur. The motivation for mixed-methods was to harness the positive and complementary attributes of both qualitative and quantitative methods while avoiding the limitations of using either of these in isolation. The research project went beyond the traditional qualitative/exploratory pilot—quantitative survey—qualitative follow-up sequence to fully integrate qualitative and quantitative techniques into one mixed-method study. However, the effectiveness of this approach was assessed primarily by quantitative performance criteria and the resulting data used almost exclusively for statistical analyses. This study assesses a) whether it is possible to retrieve the individual, personal narratives that underlie the quantitative dataset; b) the quality and utility of these data as qualitative data; and c) compares the results of analyzing them as qualitative versus as quantitative data.

BACKGROUND

Researchers at the International Center for Research on Women implemented the Women's Reproductive Histories study, a mixed-methods research project in Madhya Pradesh, India in 2002-2003 to obtain improved data on abortion, other reproductive events, and the gender context in which they occur (Malhotra et al. 2003). The motivation for a mixed-methods approach was to harness the positive and complementary attributes of both qualitative and quantitative methods while avoiding the limitations of using either of these methods in isolation. Namely, investigators sought to:

a) build rapport so as to avoid the underreporting of sensitive events like abortion or domestic violence (Bleek 1987; Whittaker 2002) that can adversely affect large-scale surveys (Huntington et al. 1996; Jones and Forrest 1992; Rossier 2003);
b) collect high-quality, in-depth information that certain qualitative methods can yield on the service and household environment, process, and gender norms which contextualize women's experiences with contraception and abortion (Whittaker 2002);
a) achieve the generalizability, representativeness, and statistical power provided by quantitative, probability-sample surveys (Lara et al. 2004); and
b) capture lifetime experiences of abortion and contraception and associated life course factors that certain longitudinal, quantitative methods and qualitative narrative techniques can provide.

The Women's Reproductive Histories research project went beyond the traditional sequencing of qualitative, exploratory pilot—quantitative survey—qualitative follow-up to fully integrate qualitative and quantitative techniques into an innovative, mixed-method study at the data collection phase (Edmeades et al. 2010). It incorporated an emphasis on rapport-building from in-depth interviews and narrative scripting methods into a pre-coded survey instrument and applied probability sampling techniques. In spite of successfully integrating qualitative and quantitative methods into the data collection procedures, the effectiveness of this approach has been assessed primarily by quantitative performance criteria and the resulting data used almost exclusively for statistical analyses. One partial exception is an analysis of women's life course experiences with contraception and abortion (MacQuarrie and Edmeades 2011). This study used selected qualitative narratives in an exploratory manner to validate certain quantitative results, but it stopped short of presenting these results on par with the quantitative analyses.

This study explores whether the benefits of the mixed-methods approach extends beyond data collection to data analysis. That is, can qualitative analysis of data collected through mixed-methods complement quantitative analyses of the same? Specifically, it assesses a) whether it is possible to retrieve the individual, personal narratives that underlie the quantitative dataset; b) the quality and utility of these data as qualitative data; and c) compares the results of analyzing these data as qualitative data versus as quantitative data.

THE MIXED-METHOD APPROACH

The details of the mixed-methods approach used in the Women's Reproductive Histories study and the process by which it was developed have been reported elsewhere (Edmeades et al. 2010). However, it is worthwhile to repeat describe of key features here. The study incorporated a narrative method into a quantitative questionnaire format (MacQuarrie et al. 2002). While the survey instrument more closely resembles a pre-coded, quantitative survey rather than a qualitative, in-depth interview guide, its structure carefully mimicked the narrative flow, which extensive prior "storytelling" interviews showed us women predictably used to share their experiences with abortion. Furthermore, interviewers were well-trained in qualitative interviewing skills, rapport building, and the structure of the questionnaire. Thus, women's abortion-related experiences were elicited in the context of their larger life stories, adopting a more fluid and natural conversational flow.

Beginning with the time of her marriage, women were led through their first pregnancy and sequentially through their entire pregnancy history, with information collected on each pregnancy regardless of outcome. Pregnancies were used to "anchor" key events in clear

interval periods so as to improve challenges with recall (Casterline 1989; Huntington et al. 1996; Yount and Gittelsohn 2008). Respondents were asked over 200 individual pregnancy-specific questions covering household circumstances, quality of relationships with family members, agency, knowledge, attitudes, access, and use of contraception and abortion and interactions with health services. As a result, complete reproductive life histories with time-varying covariates are built for all surveyed women. A graphic depicting the narrative pathways through which respondents are lead is reproduced from an article describing the development of the mixed-method tool (Edmeades et al. 2010).

--Fig 1 about here--

The survey was conducted with a probability sample of 2,444 married women between the ages of 15-39 years who had at least one child in Madhya Pradesh, India. A stratified cluster sampling strategy, with oversampling of urban areas and probability proportional to size sampling, was used to achieve a sample representative of this population at the state level. The resulting dataset of 2,444 women is comprised of 11,610 pregnancy intervals, including 9,127 closed intervals with a known pregnancy outcome, of which approximately 750 indicate an attempted abortion. The sampling methods used in the study are clearly of the type most commonly associated with quantitative studies, rather than qualitative ones.

The data collected through the study's integrated methods are produced as a single strand of data and maintained in Stata an SPSS, clearly signifying that a mono-strand study prioritizing quantitative data was intended (Bryman 2006). While substantial focus was given to integrating qualitative and quantitative methods into a single, mixed-methods data collection effort, little to no consideration was given to the use of qualitative or mixed-methods at the data analysis stage.

While we were interested in capturing the "social experience and lived realities" of women's experiences with contraception and abortion that qualitative data could provide, we failed to design the mixed-methods approach in a "qualitatively-driven" way beyond the data collection phase (Mason 2006). The goal was to harness the strengths of qualitative data collection methods to produce an improved quantitative dataset suitable for widespread statistical analyses. The question before us is whether the quantitative dataset can now be retrofitted to facilitate qualitatively-driven analysis.

QUANTITATIVE EFFECTIVENESS OF THE MIXED-METHOD APPROACH

The research project met its goals to achieve a large, representative sample and reduce underreporting of abortion. A comparison with a similar sample for the NFHS-2, the Demographic and Health Survey collecting data in Madhya Pradesh at the nearest time point to this study, shows abortion ratios consistently five times those estimated by the NFHS-2 (Edmeades et al. 2010; Malhotra et al. 2003).

The project was also effective in capturing in-depth data on a wide range of contextual factors surrounding reproductive events infrequently found in quantitative data, and doing so for each pregnancy interval in a woman's reproductive history. The result is a comprehensive dataset suitable for analysis on numerous topics, including those applying a life course approach or otherwise requiring time-ordered data. Indeed, a number of analyses have resulted from this project covering son preference, determinants of abortion, abortion morbidity, empowerment, and contraception and sterilization (Allendorf 2012; Edmeades et al. 2012; MacQuarrie 2009; 2013; MacQuarrie and Edmeades 2009; 2011; Nyblade et al. 2010). Although these analyses

draw on the contributions gained by incorporating *qualitative* methods into the mixed-method approach (rich contextual data, life stories), they are all essentially *quantitative* analyses.

POTENTIAL OF QUALITATIVE ANALYSIS

The data are maintained in Stata and pregnancy intervals are frequently pooled for analysis, although occasionally women are used as the unit of analysis (e.g. MacQuarrie 2013; MacQuarrie and Edmeades 2011). In spite of this format of the data, it is (a vast collection of) women's individual reproductive life stories on which these data are founded. Records of these stories remain in the dataset, as rows of quantitative values. Using the original questionnaire or the variable names as a "script", these data could potentially be translated and read as a story. That is, the original narratives could be reverse-engineered from the quantitative data.

One (quantitative) analysis from these data explored linkages between barriers to contraceptive use and barriers to abortion as they evolve over the life course (MacQuarrie and Edmeades 2011). In an early phase of that analysis, the authors attempted to select three individual women from the dataset and reconstruct portions of their life narratives. Women were selected at random using specific values on key variables as selection criteria to correspond with one of three "profiles" that emerged from the quantitative analysis. The goal was to look within specific examples of these profiles for additional contextual factors influencing women's contraception and abortion behavior. The results of this exercise were not incorporated into the overall analysis nor were they ever published. However, they suggest that the qualitative narratives can be extracted from the quantitatively-formatted data and reformulated as textual narratives upon which qualitative methods of analysis could be applied.

ANALYTIC STRATEGY

The present study builds on this preliminary foray into reconstructing personal narratives of abortion experiences. Using a larger number of cases, we attempted to reconstruct more complete reproductive life histories in narrative form. We examine both the feasibility (both of constructing the narratives and analyzing them) and what is gained by doing so. Specifically we assess a) whether it is possible to retrieve the individual, personal narratives that underlie the quantitative dataset; b) the quality and utility of these data as qualitative data; and c) compares the results of analyzing these data as qualitative data versus as quantitative data.

Our initial step was to extract at random a larger number of cases from the data (n=12) according to the three contraceptive experience profiles documented earlier. These are: (1) non-users of modern, temporary contraception; (2) unsuccessful contraceptive users; and (3) successful contraceptive users (MacQuarrie and Edmeades 2011). An additional 4 cases were selected among women who had attempted an abortion in their lifetime. The selection criteria (within which cases were randomly selected) are having complete data on core variables of interest (contraception, pregnancy, and abortion related), at least three pregnancy intervals, and having been sterilized, so that the narratives reflect a completed reproductive history. In the second step, a sample of 20 cases was selected at random and without regard to the contraceptive use profiles applied in the first step. Their personal narratives were reconstituted in full, subject to any limitations of the data.

With both samples, the ease or difficulty with which the numeric data are converted to narrative form and observations about the reconstructed narratives is documented. Secondly, the

samples are analyzed in a fashion similar to analysis of qualitative interview transcripts to see what information they yield about (1) any abortion experience and contextual factors (2) other themes that did not occur to the investigators at the outset of the analysis. The analysis of the narratives are compared to the findings from the quantitative analysis (MacQuarrie and Edmeades 2011) to assess if (1) they each offer similar, confirmatory results; (2) they offer different forms but complementary results; or (3) they yield contradictory results. Throughout, the analysis of the criteria-screened sample is compared to that of the randomly-drawn sample to discern whether using selection criteria alters the type of findings elicited from the narratives.

FINDINGS

Can personal narratives be reconstituted?

It is possible to recompile women's complete reproductive life histories in narrative form from the quantitatively coded data. Nearly 40 cases were exported from Stata into Excel. The cases were selected on the basis of the woman's unique identifier (serial number) with the data in wide format to ensure each woman's story had an equal probability of being selected regardless of the number of pregnancy intervals contained in her reproductive history. However, the selected cases were exported in long format with each row representing one pregnancy interval. This format made it easier to "read" the stories from the quantitative data by conveying how long each story was likely to be. From Excel, each woman's story was "transcribed" into Word, along with any observational comments by the researcher. The transcribed narratives were not input into any qualitative data software package, such as Nvivo or AtlasTi, and no pre-determined coding structure applied. However, the resulting format of the narratives as text

documents means that they could have been entered into such software packages to facilitate additional textual analyses. Table 1 provides a summary description of the reconstituted narratives.

--Table 1 about here--

The products that result from this process are marked by key elements that are core to a narrative: The resulting narratives are coherent and internally consistent stories. Each story takes a chronological form with a beginning, middle, and end. They each contain complete information on the major life events that the study was interested in; each pregnancy and its outcome are described in full detail. They also retain in-depth, contextual information on circumstances within the household before and during each pregnancy. The following excerpt from Sadhana's story[1] gives an example of the level detail and the progression of events over the course of a single pregnancy interval.

> Sadhana married her husband, a man two years her senior, at the age of 15 and began living with him one year later at the age of 16. From that point on, she joined her husband's family household in her in-laws' home. She reported minimal problems in her relationship with her new in-laws and with her husband. She was free to move around the community unaccompanied and without seeking permission and could make spending decisions as she pleased, with the exception of purchases of jewelry for herself or contraception. It was somewhat difficult to meet their household living expenses each month and she was not earning money at the time. Her husband was in residence and he was not abusive.
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> Although Sadhana said at the time of the interview that her ideal timing for the first would be 3 years after marriage, Sadhana wanted a child as soon as possible after marriage, as did her husband. They each wanted the first child to be a boy, in particular. She felt no pressure from her in-laws to have a child right away. She neither discussed with her husband or anyone else the idea of contraception, nor did she do anything to delay pregnancy because she wanted a child soon.

[1] No names were recorded during the interviews. All names in this paper are assigned pseudonyms.

> She became pregnant between 1-2 years following cohabitation with her husband. Both she and her husband wanted the child then. She did not have the pregnancy confirmed medically, and sought no antenatal care, nor did she have any type of test (e.g. ultrasound or amnio) during the pregnancy and did not learn the sex of the baby before its birth. She did not consider antenatal care to be necessary and had an uncomplicated pregnancy. At full term, she gave birth to a boy at her in-laws' house, attended by a relative. Her in-laws paid the Rs 101-500 for delivery and post-natal care. She spent nearly a month recuperating, during which time she received full support and care from her husband and in-laws. Her parents did not live nearby, so did not provide support. She breastfed her son for more than a year. No one approached her following delivery to discuss family planning with her.
> *(Sadhana, age 30, illiterate, scheduled caste, Hindu, 5 pregnancies (4 boys, 0 girls), never used contraception)*

In addition to substantial detail within each interval, the narratives reveal the progression of individual lives across intervals, as household relationships and decision-making evolve, episodes of violence or financial difficulties surge or ebb, contraceptive knowledge is acquired, and childbearing intentions crystalize and are pursued. The narratives capture both subtle shifts in household circumstances and episodic shocks, such as the death of a child or an attempted abortion. Having exported the quantitative data in long form, with each interval occupying a row, facilitated comparisons of contextual factors over time as well as transitions within each interval, and assisted the researcher in recording their observations.

Finally, and perhaps a defining characteristic of good qualitative data, the reconstructed narratives convey a sense of the personal, lived experiences of the respondents. If a strength of quantitative data lies in the anonymity of its cases and the strength of large numbers and aggregated numerical patterns, the strength of qualitative narratives comes from the differentiated individual. In constructing and reading the narratives from the quantitative data, we really felt that we were getting to know personal, individual and whole lives of these women.

(How) Do reconstituted narratives compare to originally told narratives?

The reconstituted narratives bear much similarity to narratives collected through any in-depth interviewing process, however, they also have several notable differences. Some of these differences may hold no material implications whatsoever for analysis, while others may introduce some functional limitations.

First, the reconstructed narrative loses the first person voice of the respondent. Instead, it introduces a third person narrator who retells the woman's story. The words and phrasing are no longer the respondent's own, but are derived from the standardized wording of the questionnaire's questions and pre-code responses. While one can argue that there always exists some distance between in the respondent and research in qualitative research, particularly if narratives are transcribed or coded by someone other than the original interviewer, there is even greater distance in reconstructed narratives because the interviewer no longer has access to the respondents' original words. Interviews were not recorded and so the reconstructed narratives cannot be compared directly to their original form.

Secondly, a limitation related to the loss of the first person voice is that it is not possible to select direct quotes attributable to the respondent. The use of direct quotes is a common and effective way for qualitative data to be displayed. While portions of the reconstructed narratives can still be extracted and used to provide a personal example of a generalized finding, that example takes is a paraphrase of what the woman respondent may have said, or takes the form of a profile, summary or other third-person retelling.

Thirdly, the reconstructed narratives can become repetitive and formulaic in form and tone. The quantitative data follows the structure of the questionnaire. Each narrative chronicles

women's reproductive lives from the time of their first marriage, systematically through each pregnancy interval, to the time the respondents or their husbands were sterilized and then to the time of the interview. This questionnaire structure was based on an internal logic and a typical narrative script that emerged during an early, formative stage of research. While individual respondents freely told their stories in whichever order suited them, they generally followed this typical script. Where they did not, they were nonetheless recorded on the survey instrument per the order of the questionnaire, with the interviewer confirming the details of any questions omitted or information given "out of order".

The conversion of quantitatively recorded data into a narrative "transcript" followed this questionnaire structure. In addition to the interval-by-interval story, each narrative includes a profile section collected during the first interview session, which describes various ascribed characteristics (e.g. religion, caste) and achieved characteristics (e.g. her/her husband's education, occupation, socio-economic status, contraceptive knowledge, attitudes toward abortion, and ideal family composition). One variation among the reconstructed narratives is the placement of this profile section. This section could be placed at the start of the narrative, as something of an introduction to the respondent, or following the details of all the pregnancy intervals since the data were asked at the time of the interview. Alternatively, the profile may be split with ascribed characteristics and characteristics achieved before marriage (e.g. education) at the start of the narrative and those pertaining to the time of the interview (e.g. current contraceptive knowledge) completing the narrative. This placement, however, is entirely at the discretion of the researcher who "transcribes" the narrative and may or may not vary across respondents. The general end result of narratives overwhelmingly with the same organizational

structure gives the appearance that each respondent told her story in the same manner when, in fact, they may not have done so.

A fourth difference between the reconstituted narratives and their original telling entails a potential loss of specificity. The questionnaire captured women's stories with pre-coded response categories. For a number of questions, responses were captured as a grouped category. This was frequently the case with questions related to durations of time, fees and expenses, or for women who provided an "other" response. So a woman who told an interviewer that she became pregnant nine months after her last birth had her response coded as 7-12 months and a woman who became pregnant 18 months later had her response coded as 1-2 years. This was done to suit the needs of quantitative analysis: to reduce the risk of recall error (we believed that women who might not accurately recall the timing of an event in the distant path to the month may nonetheless do so to several months or year) and to adopt grouped categories into which finer distinctions would be collapsed in final analyses. However, the result is that the reconstituted narratives do not differentiate the story of a woman who correctly situated a life event to a specific time from a woman who only approximately situated it.

Fifth, each variable in the quantitative dataset is given the same weight and this even-handed tone is carried over into the "transcribed" narratives. One loses the emphasis the original storyteller gave the interviewer during the interview. A woman may have casually mentioned in passing that she experienced physical violence by her husband early in her marriage but spend five minutes describing the restrictions placed on her mobility in and around the community and the effect that had on her life at the time. However, the quantitative dataset, and therefore the reconstructed narrative, only records that she had highly restricted mobility and was frequently beaten, without giving any indication as to which of these she found to be important to her life.

Similarly, any themes that a respondent introduced in her narrative that fell outside of the scope of the questionnaire is not recorded at all, no matter how important to the phenomenon of interest.

Most frequently, the result would be the lack of any original emphasis at all. The risk here is that in a few cases the respondent's original emphasis may be substituted by that of the narrator. There is greater potential of this risk if a narrative is not reconstructed in full, but only selected sections of a narrative is being transcribed or analyzed. There is the potential for the researcher to insert their own emphasis where it did not exist in the original and to exclude meaningful factors outside of the portion of the story being heard.

A final and related difference is that the reconstructed narratives are stripped of any internal attribution the original narration may have contained. Qualitative analysis often relies on two means to establish a correlative or causal relationship between "variables". The first is by observation of a repeated theme or pattern that emerges across multiple transcripts: We conclude that women's empowerment facilitates their use of contraception in line with their fertility goals when we see that women who do not use temporary contraception despite wanting to postpone a pregnancy repeatedly describe conditions of relative disempowerment, particularly when we see that contraceptive users describe themselves as having greater empowerment.

The second is by direct attribution by the respondent: We conclude that having the support of her husband or in-laws helps a woman access a more effective method of abortion when *she tells us* that is why she was able to go to a doctor for dilation and curretage rather than taking pills at home. In the case of reconstructed narratives, only the first means of establishing relationships is available to us. This is perhaps because this is the method that has a direct

corollary in quantitative analysis in the use of statistical tests of association and significance. The exception to this limitation is in those cases where attribution is embedded in the wording of a question. Examples include when women were asked why they chose a particular contraceptive method, why they did not use contraception, or why they did not attempt an abortion (asked of women who said they did not want to become pregnant then or considered termination). In these cases, we can assume attribution on the part of the respondent.

How do the results of the narratives compare to those of quantitative analyses?

In this section of the paper we move beyond the feasibility and form of reconstructing narratives to compare how the results of analyzing reconstructed narratives compares with the results of quantitative analysis. In particular, we are comparing the narrative results against an analysis of the barriers to contraceptive use and use of abortion over the life course among women who wanted to delay or prevent a pregnancy (MacQuarrie and Edmeades 2011). Occasionally, we compare findings with other published analyses of the quantitative data. Our main interests are in ascertaining whether the results from the qualitative analysis of reconstructed narratives support or contradict those from quantitative analyses.

Result 1: The ability to achieve reproductive desires through the effective use of contraception is persistently low across the life course. A quantitative analysis of women's first, third, and fifth pregnancy intervals indicated that 92-95% of women who wanted to delay or limit childbearing failed to avoid pregnancy or became pregnant before the time they desired, figures which do not improve substantially over the life course (MacQuarrie and Edmeades 2011). Three consecutive occasions for "failure" were investigated: (1) women who wanted to avoid pregnancy nonetheless did not want to use contraception; (2) women who wanted to use

contraception did not adopt a method; (3) women used contraception but either discontinued using it or experienced method failure.

--figures 2.1-2.3 about here--

Like the quantitative data, the narratives are replete with examples of women who wanted to delay pregnancy but who were unable to effectively use contraception to that end. Nirmala (age 30, 4 pregnancies (2 girls, 2 boys)), for example, wanted to wait until almost 2 years after her marriage to have her first child but became pregnant within 4-6 months. After having two children, she wanted no more children but went on to have two more pregnancies, one of which she unsuccessfully tried to abort. She never used contraception until she was sterilized after her fourth child, at age 25.

The qualitative data mirrored the quantitative in that it showed inability to prevent or control the timing of pregnancy through contraceptive use to occur frequently among women and to persist over repeated intervals of women's lives. However, the magnitude (>90%) was not as apparent in the qualitative data. One explanation may be given by women who want to delay pregnancy but do not want to use contraception. This disconnect accounted for the largest proportion of women who did not use contraception to achieve their reproductive desires. Among women who wanted to delay or limit, 89% of women in their first interval, 71% in their third, and 60% in their fifth interval did not want to use contraception.

The quantitative analysis categorized women as wanting to delay/limit childbearing if they reported wanting a child after a spacing of 2 years or more or if they reported not wanting any more children at all. This is a common criterion used, for instance, in the algorithm for calculating unmet need for family planning. However, the qualitative analysis indicated that

numerous women reported wanting their next child in 1-2 years, 2-3 years, or after a longer gap who nonetheless did not want to use contraception because they "wanted a child soon." This was particularly the case among women who married at a young age or who had experienced a sizable gap before their first pregnancy. It may be the standard "two years or more" criterion for establishing a desire to space is not considered to be delaying pregnancy by women themselves in this context. Or some women may (correctly or incorrectly) believe themselves to be at less than peak fecundity, such that no particular action is required to achieve their desired spacing.

Result 2. The type of disconnect (failure) and reasons for it shift over the life course. The quantitative analysis revealed that, over successive intervals, a greater proportion of women who wanted to delay/limit also wanted to use contraception, a greater proportion of those who wanted to use contraception did so, and a greater proportion of contraceptive users used a method consistently and effectively until the time they wanted a subsequent child (see Fig 1.1-1.3) (MacQuarrie and Edmeades 2011). The analysis also showed not only did the proportion of women experiencing a given disconnect or failure (e.g. wanting to use contraception but not doing so) decrease over the life course, but the reasons for experiencing that disconnect also shift over the life course.

--Fig 3 about here--

The analysis of the narratives showed a similar trend over individual women's life courses. Cumulatively, they detail how pressure for a child declined over time, contraceptive knowledge is acquired, and resistance to it use is reduced. They also show how their own fertility desires and those of their husbands align more closely later in their reproductive lives. In numerous cases, they tell how women begin by not wanting to use contraception, to wanting

to but failing to do so, to overcoming barriers to effectively using contraception as their reproductive life course unfolds. It is not uncommon for women who were identified by the profile as a "successful user of contraception" to have experienced some period during which she could not use contraception when she wanted or was unable to do so effectively to achieve her fertility goals. The story of Kamila, who was unable to use contraception effectively until her fourth pregnancy interval, illustrates.

> When first married at age 18, Kamila lived with her in-laws. There were some difficulties with her relationships with her husband and in-laws then. She face few restrictions on decision-making about spending, though she sometimes sought permission to go to some destinations away from the community. Her husband did not hit her. She wanted a child, preferably girl, at an undecided time. Her husband, she said, was indecisive about the timing, and wanted either a girl or boy equally. She faced a little pressure from her husband to have a child soon. She did not want to use anything to delay or prevent pregnancy, as she wanted a child quickly. She became pregnant 7-12 months after marriage at a time that both desired. She had antenatal care from a government hospital where she delivered a son with a doctor present. She had the full care and support of in-laws and her husband during her post-partum recovery. No one advised on family planning following her delivery.
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> After her son was born, she and her husband live in their own house with her in-laws present. They had minimal relationship problems, but her husband was sometimes violent and they had few difficulties with finances. She did not want a child right away. Her husband was indifferent to using something to delay or prevent pregnancy. Kamila did not discuss it with anyone, or use contraception because family members did not approve. She became pregnant 1-2 years after the birth of her first child and was satisfied with the timing. As before, she had antenatal care, but gave birth at her parents' home with nurse/ANM attending. She had a second son. A family member or friend provided her advice on family planning after her delivery.
>
> She no longer had any spending restrictions and few mobility restrictions. Kamila reported some financial difficulties and some violence at the hands of her husband. She did not want another child at all, though her husband did. He hoped for a girl, after a spacing of 2-3 years, and she felt a little pressure from

> him for a child. She wanted to do something to delay pregnancy and her husband approved. Kamila discussed it with relatives. She began using pills because they are easily available and were suggested by a friend/relative. She experienced no problems with the method and was happy with it. However, she discontinued using them before she sought to become pregnant because her husband refused. She became pregnant 3-4 years later and delivered a third son at government hospital with doctor. No one advised on family planning after the birth of her son.
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> Things improved at home: Kamila's husband no longer beat her and faced no restrictions. She still wanted no more children, but her husband still wanted a girl 2-3 years after the birth of their third son and applied a little pressure. She wanted to use something to delay pregnancy and discussed with her husband. They began to use condoms because they were easy to use, had no side effects, and were easily available. They used them continuously until they wanted child. Kamila became pregnant 3-4 years later, at which time both she and her husband wanted a child then. She delivered a daughter at her parents' home with a nurse/ANM in attendance. Again, no one advised her on family planning.
> *(Kamila, age 29, general caste, higher SES, highly educated, urban, 4 pregnancies (3 boys, 1girl), effective contraceptive user)*

While gradually shifting barriers to effective contraceptive use is a commonly manifested trend, there is a second pattern that is evident in the qualitative data that is not so apparent in the quantitative analysis. The women's narratives frequently reveal that women encounter the same barriers repeatedly throughout their life course. This was the case with Alaka, a 35-year old Muslim woman living in an urban area of Jabalpur. She reported that her ideal family would consist of three children (2 boys and 1 girl) each spaced about 2-3 years apart. However, she herself experienced 10 pregnancies resulting in the births of six daughters and two sons; She also experienced one miscarriage and one induced abortion. Prior to her first four pregnancies, she did not use contraception because she said she did not know about specific methods and because she either wanted or was unsure about wanting another child. She did want to do something to delay or prevent the next six pregnancies. She did not use contraception prior to her fifth

pregnancy because she said she did not know of specific methods and her husband was opposed to using contraception. Prior to her sixth through tenth pregnancies, she cited both husband and family opposition as the reasons she did not use contraception in spite of wanting to do so.

Result 3. Abortion is most common among women who used family planning and secondly among those who wanted to but did not use family planning. The qualitative and quantitative analysis both reveal that abortion is an especially infrequently pursued outcome, even when a pregnancy is unwanted or mistimed. Quantitative analysis of these data elsewhere show that abortion is attempted in about 8% of all pregnancies and with about 60% of those pregnancies being terminated (MacQuarrie and Edmeades 2009). This proportion is slightly higher when restricted to pregnancies at the outset of which women wanted to delay or limit (MacQuarrie and Edmeades 2011). In all intervals, pregnancies ended in abortion more frequently among those women who wanted to use contraception, and did so, but were unsuccessful in their effort to control their fertility. Between roughly one quarter and one third of pregnancies to women in this situation were terminated by abortion. Abortion use was somewhat lower —but still sizable—among women who wanted to use contraception but did not in the third and fifth intervals. Far less common were abortions to women who did not want to use contraception in spite of a desire to limit or space childbearing. The proportion of these pregnancies ending in abortion increased across intervals.

--Fig 4 about here--

Similarly, the narratives reveal that abortion is more commonly attempted among women fitting the profile of ineffective users of contraception, whether selected on the basis of this profile or not. Among women's narratives profiled for having attempted abortion, those women

often had a history of attempting to use contraception, but unsuccessfully, most commonly in the period leading up to the pregnancy they attempted to terminate. The story of Aprajita, here abridged, provides one example.

> …Aprajita was married at age 20 to her husband 5 years older and began living with him and her in-laws right away. It was easy to meet household monthly expenses, but she had many restrictions on spending and mobility. She did not work. She and her new husband did not want a child right away, but faced lots of pressure from her in-laws, especially for a boy. She was unsure whether she wanted to do something to delay a first pregnancy. Her husband did not know about particular methods and she did not discuss it with him. She did not use contraception, stating she didn't know about any methods. She became pregnant within 7-12 months later and, without having sought any antenatal care, gave birth to a daughter at her in-laws' home with a dai/TBa present.
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> After the birth of her first child, Aprajita's childbearing desires more clear: she wanted another child, preferably a son, after 3-4 year gap. Her husband also preferred a boy, but wanted a child earlier than she did: 2-3 years gap. She felt a lot of pressure from in-laws for another child, especially a boy. She wanted to do something to delay a pregnancy and her husband approving of the notion of using contraception. They used condoms because they were easy to use, her husband preferred the method, and it was suitable for spacing. They used condoms continuously until her next pregnancy, which occurred per her desired timing, 3-4 years after the birth of her daughter. She again gave birth to a daughter.
>
> After two children, her home situation and childbearing desires remained largely the same. She wanted another child, preferably son, after 3-4 year gap. Her husband's desires coincided with hers, but she still faced a lot of pressure from in-laws for another child/son. Again, they used condoms because her husband preferred it and it was suitable for spacing. However, she experienced method failure and became pregnant 1-2 years following the birth of her second child.
>
> She and her husband, at time of pregnancy, agreed that they wanted another child but at a later time. She did not want to continue pregnancy, discussed termination with her husband and decided herself to attempt to abort. Her reason for wanting an abortion was because it was too soon after the previous birth. At less than two months into her third pregnancy, she tried to abort herself by taking pills at her parents' home; her mother was with her. She experienced excessive bleeding and an incomplete abortion that left her bed-ridden for 2-3 days, requiring medicines from a private doctor/clinic. At the time of this attempt, her husband was somewhat supportive, her parents fully supportive, and her in-laws did not know about the attempt. She then visited a private doctor 1-2 hours outside of the community for an MTP. The doctor treated her well and explained the procedure cogently, but demanded high fees. Her mother, who accompanied her, paid the

> Rs 1100-2500 in fees. The MTP was successful in terminating the pregnancy. She experienced some weakness afterward, for which she rested in bed for a day. This time, her husband and her mother were fully supportive of her attempt. Her in-laws still did not know about it. No one advised her on family planning after the procedure…
> *(Aprajita, age 35, educated, higher SES, Hindu, 4 pregnancies (1 boy, 2 girls), used contraception but not successfully)*

The results from the analysis of the reconstructed narratives not only mirror these analyses on contraception and abortion over the life course, but mirror other quantitative analyses as well. For example, the narratives illustrate a gradual shift toward greater freedom of mobility and spending decision-making, improved relationships with husbands and in-laws, and less domestic violence as women progress through their reproductive careers. While these shifts were usually subtle, to the extent that there was a sizable change, they tended to coincide with intervals in which women transitioned from an extended to nuclear household living arrangement or following the birth of one or two sons (or two-three births). These findings support the results of structural equations analysis of the evolving relationships between measures of women's empowerment and stages of family formation (MacQuarrie 2013).

The narratives also demonstrate how frequently women engage their husbands in the process of abortion and how important their like-minded fertility desires and support are to obtaining a more effective and safe abortion method, confirming findings reported elsewhere (MacQuarrie and Edmeades 2009). They also indicate that using contraception or attempting an abortion is sometimes possible only after having achieved a certain family size and containing a certain number of sons, as determined in earlier quantitative analyses (Edmeades et al. 2012).

CONCLUSIONS AND DISCUSSION

The results from the exercise described in this paper demonstrate that it is indeed possible to reconstruct women's personal narratives from data collected through a mixed methods technique and recorded quantitatively. A total of 36 narratives were successfully recompiled and rendered in a format suitable for qualitative textual analysis.

Comparison of the findings show analysis of the qualitative narratives largely confirms the quantitative findings. In some cases, the results are not only confirmatory, but complementary form, as in the case where the narratives show the intractability of barriers to contraceptive use alongside shifts in barriers to contraceptive use. These stories are as effective as the pathway diagrams at conveying to the reader the cumulative magnitude of barriers to effective contraceptive use and to abortion. Additionally, the narratives illustrate the aggregated variables in a way that personalizes the statistics on abortion and contraception in compelling ways.

Further, reading narratives in full can lead the researcher to consider previously unconsidered themes and factors related to the phenomenon of interest precisely because they emerge, unsolicited, from the stories rather than variables in a tabulation plan which are pre-selected a priori. This is the case in the role of violence, which though it may not determine either contraceptive use or abortion behavior, is a prominent characteristic of some women's lives.

That both producing reconstructed narratives is possible and their analysis is validated by quantitative analyses opens new opportunities for applying mixed methods at the analysis stage as well as during data collection, either by conducting agendas for qualitative and quantitative

analyses in parallel or by embedding a qualitative study within a quantitative one. However, the limitations to the reconstituted narratives may make doing so impractical or undesirable.

Some of these limitations are due to the design of this particular mixed methods study and its intention for quantitative-only analysis. Therefore, some of these limitations could be eliminated or reduced by making certain modifications to the design if it were to be adapted elsewhere. For example, the loss of specificity could be mitigated if the data collection instrument provided room to record both the specific response provided by the respondent and the grouped categorical coded response, resulting in two variables, one optimized for qualitative analysis and the other for qualitative. This process could be automated in cases where data are collected via tablet computers.

Problems of lack of emphasis, attribution and omission may be partially overcome by incorporating opportunities for open-ended responses, recording of interviewer observation, and flag variables. Similarly, problems of direct quotes and attribution may be reduced if original interviews were recorded and those recordings retained. We did not record interviews in this study because we believed that doing so may interfere with the rapport and trust we wanted to build between the respondent and interviewer and that it may make respondents less likely to discuss their experiences with abortion and domestic violence, among other sensitive topics. However, recording interviews is certainly feasible for narratives of less sensitive issues. Such a procedure may work well in concert with flag variables contained in the quantitative dataset.

The large sample size of the quantitative data set in this study is another limitation to the use of narratives that has not been heretofore discussed. This study collected personal narratives from 2,444 women using a mixed method design, a number that is prohibitively large for both

the compilation of narratives from quantitatively formatted data and for qualitative analysis. Qualitative studies seldom have samples sizes of 700, the approximate number of women with abortion experiences in our data, let alone more than 2,000. The need, in this case, to reduce the sample to a manageable size introduces another weakness, which is that restricting the sample to a feasible analytic sample may eliminate the representativeness of the sample if absolute sizes are too small or if selectivity bias is introduced in the manner in which analytic cases are selected. However, researchers may entertain the idea of constructing narratives for a carefully-considered subsample of cases as part of an embedded mixed methods study at the analytical stage.

While sizable, these limitations may be successfully managed such that the use of narratives for qualitative analysis alongside quantitative analyses becomes feasible and desirable. The very idea that data collected for use in quantitative analyses can be returned to a qualitative format to facilitate the use mixed methods in the analytical stage is intriguing. There are several instances where the potential is particularly promising for qualitative analyses of narratives to complement quantitative analyses.

First, the analysis of narratives may be valuable as a means to explore outliers, cases that do not conform to a statistically established pattern. Reading the full narrative may shed light, for example, on the one woman in the dataset who reported 20 pregnancies (the mean number of pregnancies is approximately four-five). Or it may be useful to examine how the few women who lack geographic access and have extremely limited mobility, spending decision-making and other disadvantageous household situations nonetheless effectively use contraception or access abortion manage to do so.

Secondly, it may be useful to apply to the study of rare events, situations in which there may be an insufficient number of cases to minimize standard errors and establish statistical significance of relationships between variables. Two areas to which this might apply in the present dataset are the analysis of sex-selective abortion and the use of contraception (or, even more rare, abortion) to delay the first birth after marriage.

A third area in which reconstructed narratives may complement quantitative analyses in analyzing life course phenomena or applying life course theory. One way that quantitative analyses traditionally operationalize life course concepts is to introduce a lagged variable or a variable expressing the prior ever-experience of a factor that is believed to be related to the outcome of interest. Indeed, several analyses of the Women's Reproductive Histories data have done exactly this (Lee-Rife 2010; MacQuarrie 2013). However, such variables seldom go back farther the immediately preceding time interval. Analyzing narratives that are comprised of a collection of individual women's full stories from their beginning to end may complement these quantitative techniques.

Finally, analysis of narratives may be useful when researchers do not have preconceived hypotheses to test or when those hypotheses are not substantiated by the analysis. In these situations, analysis of the narratives may fulfill an exploratory role often ascribed to quantitative analysis. Still, such investigation would be helpful in identifying salient themes and relationships identified or revealed by respondents that had not been considered by the researcher at the outset of the analysis.

Some of these areas of potential build on the known strengths of qualitative methods of analysis, generally. Their value is perhaps not new. However, the combination of their

traditional strengths with the traditional strengths of quantitative methods allows the extension of this mixed methods approach beyond the data collection phase into the analysis phase, and thus more fully takes advantage of the rich data the respondents have shared with us. As researchers design studies intended from the outset to extend mixed-methods from the data collection through the analysis phase, we may need to carefully consider whether a data are maintained as two strands, one qualitative and one quantitative, and at which points they should interface; whether their analysis should be sequential, in parallel, or embedded; and whether either qualitative or quantitative analyses should remain the primary focus (Bryman 2006; Guest 2012; Plano Clark et al. 2013), or whether novel ways of integrating analyses should be pursued, as was done with one study incorporating narratives and quantitative analysis of educational practices (Kington et al. 2011).

REFERENCES

Allendorf, K. (2012). Women's Agency and the Quality of Family Relationships in India. *Population Research and Policy Review* 31(2), 187-206.

Bleek, W. (1987). Lying Informants: A Fieldwork Experience from Ghana. *Population and Development Review* 13(2), 314-322.

Bryman, A. (2006). Integrating Quantitative and Qualitative Research: How Is It Done? *Qualitative Research* 6(1), 97-113.

Casterline, J.B. (1989). Collecting Data on Pregnancy Loss: A Review of Evidence from the World Fertility Survey. *Studies in Family Planning* 20(2), 81-95.

Edmeades, J., Nyblade, L., Malhotra, A., MacQuarrie, K., Parasuraman, S., and Walia, S. (2010). Methodological Innovation in Studying Abortion in Developing Countries: A "Narrative" Quantitative Survey in India. *Journal of Mixed Methods Research* 4(3), 176-198.

Edmeades, J., Pande, R., MacQuarrie, K., Falle, T., and Malhotra, A. (2012). Two Sons and a Daughter: Sex Composition and Women's Reproductive Behaviour in Madhya Pradesh, India. *Journal Biosocial Science* 44(6), 749-764.

Guest, G. (2012). Describing Mixed Methods Research: An Alternative to Typologies. *Journal of Mixed Methods Research*.

Huntington, D., Mensch, B., and Miller, V. (1996). Survey Questions for the Measurement of Induced Abortion. *Studies in Family Planning* 27(3), 155-161.

Jones, E.F. and Forrest, J.D. (1992). Underreporting of Abortion in Surveys of U.S. Women: 1976-1988. *Demography* 29(1), 113-126.

Kington, A., Sammons, P., Day, C., and Regan, E. (2011). Stories and Statistics: Describing a Mixed Methods Study of Effective Classroom Practice. *Journal of Mixed Methods Research* 5(2), 103-125.

Lara, D., Strickler, J., Olavarrieta, C.D., and Ellertson, C. (2004). Measuring Induced Abortion in Mexico. *Sociological Methods and Research* 32(4), 529-558.

Lee-Rife, S.M. (2010). Women's Empowerment and Reproductive Experiences over the Lifecourse. *Social Science & Medicine* 71(3), 634-642.

MacQuarrie, K. (2009). "Time to Conception in Higher Order Births in India: Does Women's Empowerment Moderate the Influence of Son Preference and Sex Composition? ." in *American Sociological Association*. San Francisco.

MacQuarrie, K. (2013). Women's Empowerment across the Life Course in Madhya Pradesh, India: The Influence of Family Formation and Early Empowerment Resources. *Social Forces* under revision.

MacQuarrie, K. and Edmeades, J. (2009). "Family Ties: Household Influences on Women's Decisions to Attempt Abortions in Madhya Pradesh, India." in *XXVI IUSSP International Population Conference*. Marrakech, Morocco.

MacQuarrie, K. and Edmeades, J. (2011). "The Path Less Taken: Contraception and Abortion over the Life Course in Madhya Pradesh, India." in *Population Association of America*. Washington DC.

MacQuarrie, K., Nyblade, L., and Malhotra, A. (2002). *Exploring Women's Reproductive Histories: A Survey Instrument*. Washington, DC: International Center for Research on Women. http://www.icrw.org/publications/exploring-women%E2%80%99s-reproductive-histories *last accessed: February 1, 2013*

Malhotra, A., Nyblade, L., Parasuraman, S., MacQuarrie, K., Kashyap, N., and Walia, S. (2003). *Realizing Reproductive Choice and Rights: Abortion and Contraception in India*. Washington, DC: International Center for Research on Women (ICRW).

Mason, J. (2006). Mixing Methods in a Qualitatively Driven Way. *Qualitative Research* 6(1), 9-25.

Nyblade, L., Edmeades, J., and Pearson, E. (2010). Self-Reported Abortion-Related Morbidity: A Comparison of Measures in Madhya Pradesh, India. *International Perspectives on Sexual and Reproductive Health* 36(3), 140-148.

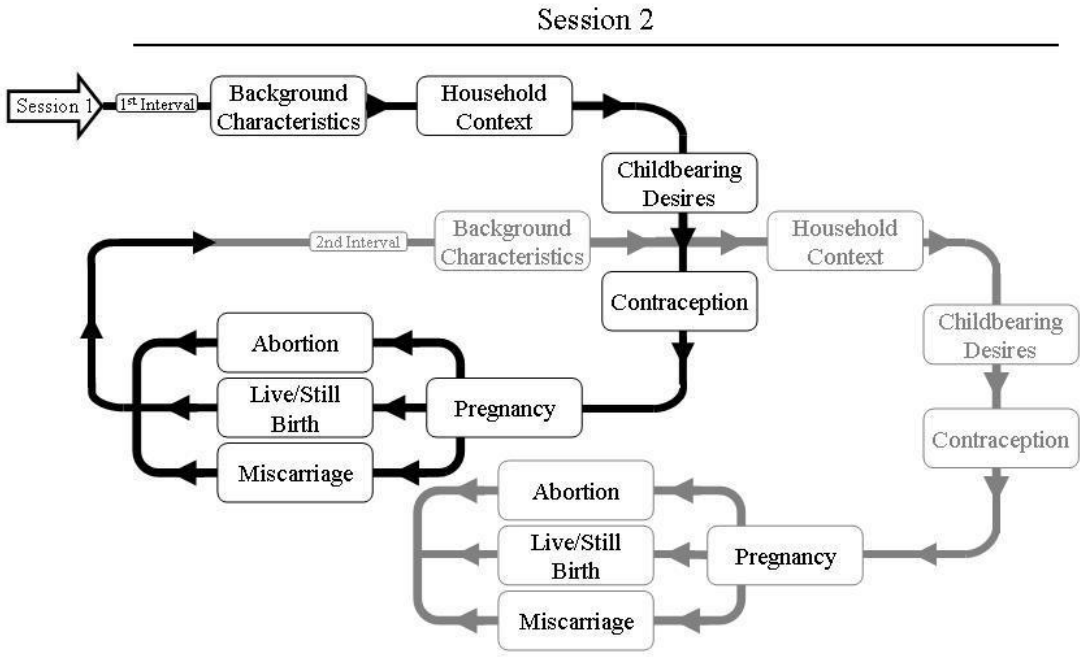
Plano Clark, V.L., Schumacher, K., West, C., Edrington, J., Dunn, L.B., Harzstark, A., Melisko, M., Rabow, M.W., Swift, P.S., and Miaskowski, C. (2013). Practices for Embedding an Interpretive Qualitative Approach within a Randomized Clinical Trial. *Journal of Mixed Methods Research*.

Rossier, C. (2003). Estimating Induced Abortion Rates: A Review. *Studies in Family Planning* 34(2), 87-102.

Whittaker, A. (2002). Eliciting Qualitative Information About Induced Abortion: Lessons from Northeast Thailand. *Health Care for Women International* 23, 631-642.

Yount, K. and Gittelsohn, J. (2008). Comparing Reports of Health-Seeking Behavior from the Inegrated Illness History and a Standard Child Morbility Survey. *Journal of Mixed Methods Research* 2(1), 23-62.

Fig 1 Graphical representation of the narrative sequence and content of questions asked in individual pregnancy intervals in the Women's Reproductive Histories study[2]



[2] Source: Edmeades, J., Nyblade, L., Malhotra, A., MacQuarrie, K., Parasuraman, S., and Walia, S. (2010). Methodological Innovation in Studying Abortion in Developing Countries: A "Narrative" Quantitative Survey in India. *Journal of Mixed Methods Research* 4(3), 176-198.

Fig. 2.1 Reproductive Pathways in the First Pregnancy Interval

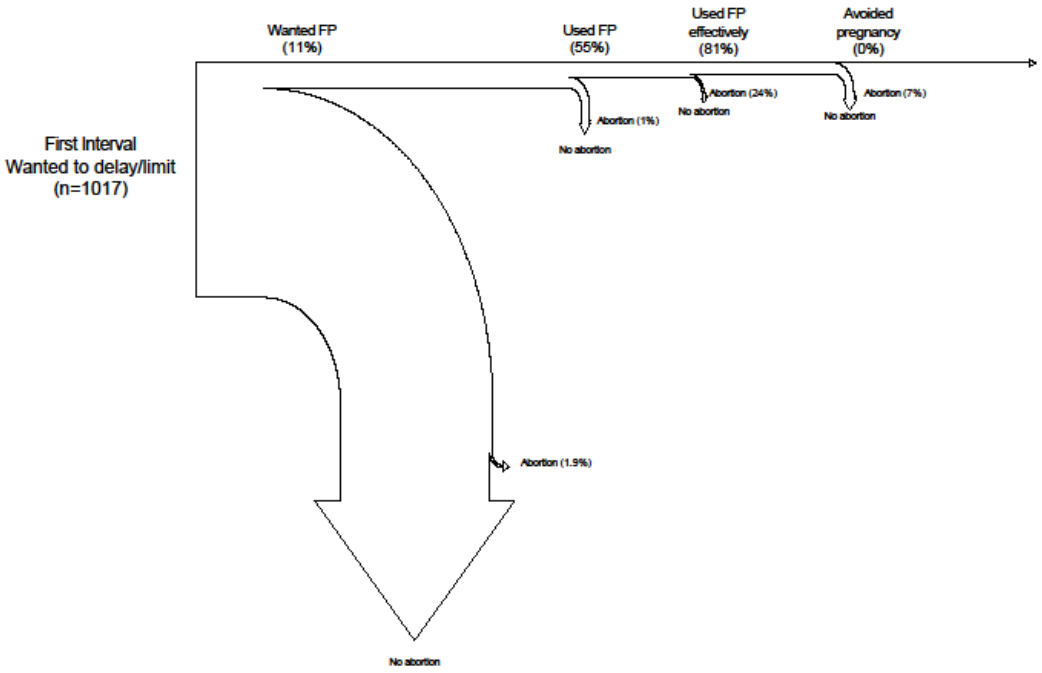


Fig 2.2 Reproductive Pathways in the Third Pregnancy Interval

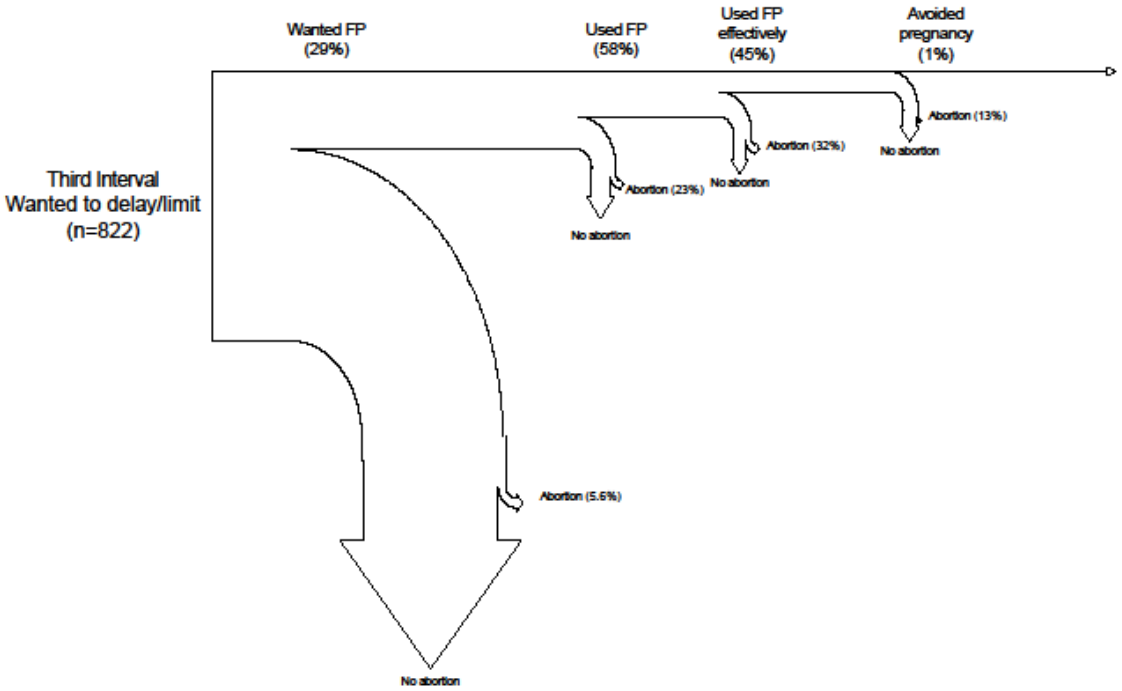


Fig 2.3 Reproductive Pathways in the Fifth Pregnancy Interval

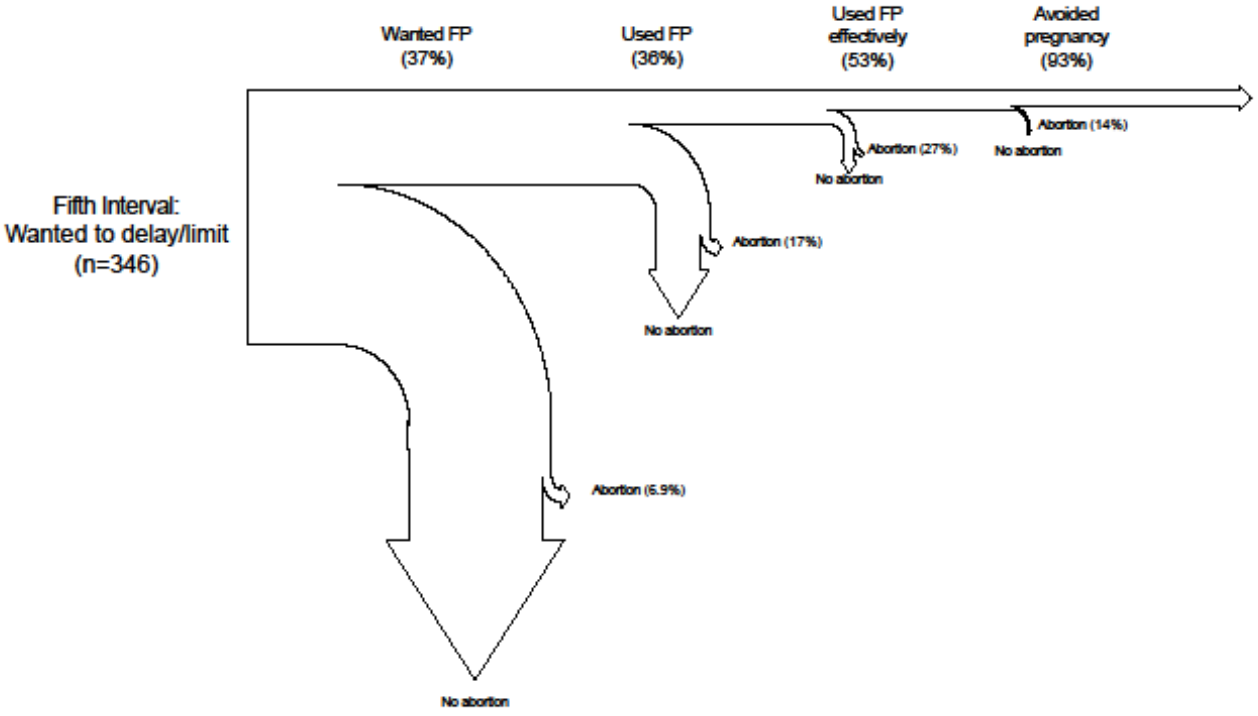


Fig. 3. Reasons for Disconnects in the Reproductive Pathway

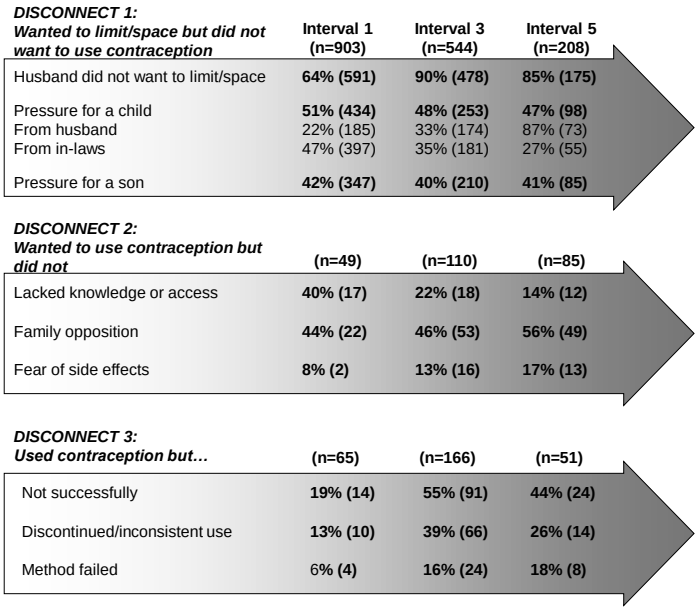


Fig 4: Proportions of Pregnancies Aborted at Each Pathway Endpoint by Interval