Fertility Intentions and Perceptions: Case Studies of Nigeria and Zambia

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Background:

Excess fertility, that is the difference between wanted total fertility and actual total fertility, is greater among the HIV-positive population than the population overall (Bankole et al. 2009). Understanding the social context of reproduction among the HIV-positive requires considering a number of additional variables that are only relevant to this population: time since diagnosis, whether on anti-retroviral therapy (ART), partner's status, and whether the individual has disclosed his/her HIV status to his/her partner. Furthermore, depending on the individual's broader social disclosure regarding their HIV status, or based on their appearances and assumptions about their HIV status made by people in their social circle and community, an HIV-positive individual may experience social stigma against continued childbearing irrespective of their own health status or fertility desires at any particular point in time.

Sub-Saharan Africa, with a high overall rate of HIV as well as comparatively high fertility, has many individuals attempting to achieve their fertility goals in the context of HIV. Some individuals may have contracted HIV before they have even begun childbearing, others may be trying to navigate becoming pregnant while avoiding HIV in low resource contexts so that they must expose themselves to the risk of HIV as a consequence of attempting to conceive; while still others have begun childbearing before or after they contracted the disease; and are at different stages of completing their family size while weighing their perception of the probability of having an HIV-positive child, losing a child they already have to HIV, and the toll they perceive pregnancy to take on their compromised health condition. Additionally, attempting to avoid pregnancy may feel out of reach to HIV-positive women who may not feel comfortable using available contraceptive methods that they perceive may interact with their HIV status or their use of ART (either because of physiological interactions or concerns about how an individual's sexual partner may interpret the use of contraception). And layered upon all of this is the issue of whether or not the individual knows (either directly, through a test, or suspects) s/he has HIV and also, whether or not the individual has disclosed his/her actual or perceived status to his/her partner, provider as well as broader social network.

These influences clearly are experienced differentially at an individual level as well as a cultural level, and access to testing and treatment as well as contraceptives also varies. To increase our knowledge about how these many social processes work to influence fertility decision-making within the context of HIV, we chose two countries to examine as case studies. The guiding principle we used in selecting these case studies was to choose two countries with different HIV rates, contraceptive use rates, and total fertility rates. This

allowed us to examine the phenomenon of fertility decision-making in the context of HIV mediated by natural variation in the three primary of the variables of interest. One country from West Africa was selected and one country from East Africa was selected for this study.

Zambia has an HIV prevalence rate of 14.3% and a total fertility rate of 6.2 but according to women of reproductive age 15-49, a wanted total fertility rate of one child less, 5.2 (ZDHS 2009). Fertility preferences differ, not surprisingly for men and for women. The ideal number of children women (married and unmarried) want, on average, is 4.6 children and men want, on average, 4.9 children. Contraceptive prevalence, including traditional and modern methods, is 40% among married women, leaving an unmet demand for contraception of 14% among this population. Nigeria, on the other hand, has a much lower HIV prevalence rate of 4.6% and a total fertility rate of 5.7, with a wanted fertility rate of 5.3 (NDHS 2009). Ideal family size for all women (married and unmarried) is 6.1 while for men it is 7.5. Contraceptive prevalence is 15% among married women, rendering an unmet demand for contraception of 20%. These national trends no doubt mask regional variations yet they serve to describe, in broad strokes, the HIV, fertility, and contraceptive use profiles of these two large and important countries.

While from a human rights perspective, it is clear that HIV-positive individuals have the right to have the number of children that they want to have and that they must be assisted to have the healthiest pregnancies possible, there remains unease about continued childbearing among HIV-positive individuals who do not have consistent access to ARTs that will be able to prevent mother to child transmission and prolong the mother's life indefinitely, or at least long enough to raise children till adulthood. The fact that males desire a higher number of children than females in both of these countries, and that both countries have total fertility rates that are higher than their wanted fertility rates provides an opportunity to explore the social context captured at the couple-level of reproductive decision-making in the era of HIV. We set out to explore how women's perceptions of partner's fertility preferences may contribute to contraceptive use and vulnerability to excess fertility. The effect of HIV as a significant mediator on pregnancy preferences as well as fertility behavior in both Nigeria and Zambia is also explored.

Methods:

Data come from a community-based as well as a facility-based sample. Both surveys were conducted in 2009. The study received Institutional Review Board approval from the Guttmacher Institute's IRB as well as from the University of Ibadan IRB and the University of Zambia Biomedical Research Ethics Committee.

The community-based sample is a multi-stage, cluster sample of households in 4 states in Nigeria (Kaduna, Benuwe, Lagos, and Enugu) and 3 province in Zambia (Lusaka, Northern and Southern). The states/provinces were selected so as to gather data from the primary ethnic groups as well as from regions with varying HIV-prevalence and fertility levels. The sample is composed of 1280 Zambian women and 1257 Nigerian women aged 18-49 and 1121 Zambian men and 1198 Nigerian aged 18-59. A facility-based convenience sample of

151 HIV-positive Zambian women and 206 HIV-positive Nigerian women aged 18-49 were also interviewed. (A facility-based sample of 147 HIV-positive Zambian men and 162 Nigerian men aged 18-59 were also gathered but they will not be used in this analysis).

The questions (which are identical on the women's community-based survey and facility-based survey) that will be used to determine current fertility preferences of the woman and her perceptions of her partner's fertility preferences (for all respondents married or living with a man) are as follows:

1a. [For women not currently pregnant:] Would you like to have a/nother child or would you prefer not to have any (more) children?
1b. [For women currently pregnant:] After this pregnancy, would you like to have a/nother child or would you prefer not to have any (more) children?
[Response categories recoded into: Have a/another child, No more/none]

2a. [For women not currently pregnant:] How about your (husband/partner)? Would he like to have (a/another) child with you or would he prefer not to have any (more) children?
2b. [For women currently pregnant:] How about your (husband/partner)? After this pregnancy, would he like to have (a/another) child with you or would he prefer not to have any (more) children?
[Response categories: Have a/another child, No more/none]

The question which captures the respondent's reasons for wanting another child is:

3a. What is the reason why you want (a/another) child? [Response categories (circle all that apply): To lead a normal life, To leave something/someone behind, To replace a child who died, To reach desired family size, To have a son, To have a daughter, Wife/Husband wants more, Other family member wants more, Other, Don't know]

In the community-based sample, respondents were asked what they perceived their HIV risk to be. "Do you think your chances of getting the AIDS virus are small, moderate great or no risk at all? [Response categories: No risk at all, Small, Moderate, Great, Has AIDS, Don't Know]

After presenting descriptive sociodemographic characteristics of the respondents (age category, education, urban/rural residence, current employment status, religion, parity and number of children alive at the time of the survey, and perceived risk of contracting HIV (for the facility-based sample, all are HIV-positive)), bivariate analyses were used to compare the fertility desires of the respondent with her perceptions of her spouse's/partner's fertility desires for both of the community-based samples as well as the facility-based samples. Current contraceptive use was examined in relation to respondent's fertility preferences and her partner's perceived fertility preferences (among those in a union), and reasons for contraceptive non-use among those who do not want to get pregnant was further analyzed. So as to improve our understanding of individuals' reasons for their stated fertility goals, respondents' reasons for wanting another child were also examined.

Preliminary findings: The majority (over half) of three of the four samples are in a union (see Table 1). The one exception is the Zambian facility-based sample where just around 45% of the sample is in a union. Both of the community-based samples are younger than the facility-based samples, with the Nigerian community-based sample being younger than the Zambian community-based sample. Most of the HIV-positive respondents are between ages 20 and 40, in the prime of their reproductive years.
The education level in Nigeria is quite a bit a bit lower than it is for Zambia. In Nigeria, almost one in five community-based respondents has no education. In Zambia, the proportion of respondents from both samples with incomplete primary or completed primary was higher than it was in Nigeria. Both HIV-positive samples were better educated than the community-based samples. Most of the sample was urban even though less than 50% of the Zambian community sample was urban, with the facility-based populations more urban than the community-based samples.

In Nigeria, approximately a third of the community-based sample worked for money, and over 40% of the facility-based sample worked for money. These proportions were lower in Zambia where only a quarter of the community-based sample worked for money and just under one-third of the facility-based sample worked for money. Forty percent of the Nigeria sample was not employed, and that proportion was much higher in Zambia: 70% of the community based sample and 57% of the facility-based sample were not employed.

In terms of religious affiliation, a quarter to a third of the whole sample was Catholic. One-fifth to one-quarter of the Nigerian sample was Protestant while almost one-half of the Zambian sample was Protestant. The population of Pentecostals/Charismatics was higher in Nigeria, as was the Muslim population (which was almost non-existent in Zambia). Over two-fifths of the Nigeria community-based sample was nulliparous as compared to roughly one-quarter of both the Nigeria facility-based and Zambia community-based samples. Only seven percent of the Zambia facility-based sample was nulliparous. In Nigeria, most of community-based sample had between one and four children while Zambia community-based sample and the facility-based samples had higher fertility. The number of children alive was of course lower than the parity of the respondents with 42% of Nigerian community-based respondents and 27% of Zambian community-based respondents not having a child alive whereas 32% of Nigerian and 9% Zambian facility-based respondents did not have a child alive.

Approximately 75 percent of Nigerian women want to have a(nother) child while only 62% of Zambian community-based respondents and 34% of facility-based respondents want to have a(nother) child. Whereas in Nigeria, women perceive their partners to be a little bit less likely or as likely to want another child as compared to themselves, in Zambia, women are more likely to perceive that their partners want another child than they do from both the community as well as the facility-based sample. Among the community-based sample only, in both countries, respondents are most likely to think that they are not at risk of contracting HIV. In Nigeria, 56% of respondents felt that they were at no risk, whereas in Zambia, 39% felt they were at no risk. In Nigeria, 15% felt they were at a small risk of contracting HIV while in Zambia, 30% felt they were at a small risk of contracting HIV.

Preliminary findings demonstrate that when examining contraceptive use according to respondent's fertility preferences as compared to that of her partner, in the Nigerian community-based sample, while 54% are using contraception when both of them want another child (likely for spacing purposes), 75% are using contraception when the woman wants another child but she perceives that the man doesn't want another child (Figure 1). When the woman doesn't want another child, but perceives the man does, 56% are using contraception whereas when the woman doesn't want and she perceives her partner doesn't want either, 68% are using contraception. Therefore, contraceptive use is highest when the woman thinks her partner doesn't want a(nother) child. In the Nigeria facility-based sample, again, contraceptive use is highest when the woman perceives her partner doesn't want a(nother) child (50% and none, as compared to 100% and 69%). In Zambia, within the community-based sample, while there's an 11% increase in contraceptive use among women who want another child but think their partner doesn't want another child compared to women who want another child and believe their partner wants another child. There is no difference in contraceptive use among women who don't want a(nother) child based on their partner's perceived preferences. Among the facility-based sample, among women who want a(another) their contraceptive use is identical, regardless of their partner's fertility preferences whereas women are more likely to use contraception if they don't want another child and their partner does as compared to couples where neither want a(nother) child.

One would assume that parity would have an effect on whether the women and/or her partner want another child. Therefore, we separated out by parity the respondent's fertility preferences, her partner's fertility preferences, and examined contraceptive use according to parity. The red bars are the woman's stated desire to have another child according to parity while the blue bars are the respondent's perception of his desires to have a(nother) child (Figure 2). Within the Nigerian community-based sample, women are more likely to not want a(nother) child than their partners. (At parity 4, their desires not to have another child are the same.) Contraceptive use is occurring among more individuals than those who want to not have a(nother) child when the respondent has had three children or less. Contraceptive use is lower than the percent of respondents who do not want to have another child (when looking at either the men's or the women's preferences) beginning at parity 4 with parity 7 being the exception. Within the Nigeria facility-based data, contraceptive use is, on average, higher. Women's desires to end childbearing continue to be higher than men's (except at parity 2, where they are equal) and contraceptive use only falls below the proportion who want to end childbearing at parity 6. (At parity 5, some women who want to limit childbearing but who perceive that their partners do not want to limit childbearing are not using contraception.) The anomalous is parity 8, where all the women who want to limit childbearing are using contraception.

The same pattern holds in Zambia where women are more eager to not have any more children than their partners. In the community-based sample, contraceptive use is higher, though, and more consistent with women's fertility desires than with their partner's fertility desires. In all cases but parity 8, more women are using contraception than the

percent who say that their partner does not want to end childbearing. At parity 5 and higher, women who want to limit childbearing are using contraception even though their partners do not want to end childbearing. The pattern in the facility-based sample is different. Men's and women's fertility preferences are much more similar and contraceptive use is occurring among fewer women than the percentage who want to end childbearing beginning at parity 1 with parity 6 and parity 9 being the exception.

To better understand the reasons behind contraceptive non-use among women within these four sub-populations who are not using contraception, we examined contraceptive non-use. One of the most prevalent reasons for contraceptive non-use was fear of side-effects (Figure 3). This fear was more prevalent in Zambia than in Nigeria, but within each country, the fear was not greater within the facility-based population than within the community-based population. Contraceptive use-related health concerns were present in the Nigerian community and the Zambian facility-based samples. Husband opposition to contraceptive use was only present in the Nigerian community-based sample while not having sex was more prevalent among the HIV-positive sample. Religious prohibition against contraceptive use was only present in Nigeria.

Reasons for women's desires to continue childbearing follow similar patterns between the Nigeria and Zambia and between the community-based sample and the facility-based sample. Among all four samples, women were motivated to continue childbearing "to lead a normal life" and "to reach [their] desired family size." Women in Nigeria were more motivated to continue childbearing "to leave something behind" than Zambia women and having a son also appeared to be more important in Nigeria than in Zambia. In Zambia, women were more likely to cite a desire to have a daughter to continue childbearing than a desire to have a son. The reason "husband wants more" was given in each of the samples, with that reason showing up as most important in the Nigeria facility-based sample. External family influences and "to replace a child who died" are less important reasons.

Preliminary conclusions: While contraceptive use in Nigeria seems to be influenced by women's perceptions of their partner's fertility preferences both in the community as well as the facility-based samples, in Zambia, this same influence does not seem to hold. Women's preferences seem to be just as predictive of contraceptive use as their partner's desires. Among the HIV-positive, while the sample sizes are small, these results suggest that in Nigeria, men's fertility preferences appear to be more predictive of contraceptive use than women's fertility desires. In Zambia, this does not seem to be the case but this might be an artifact due to small sample size.

Within the Nigeria community-based sample, contraceptive interventions to limit childbearing should focus on respondents who have had four children or more as that is where there is a desire among both members of the couple to not have another child but contraception is not being used. For the facility-based sample, this could begin at parity 5. Even though in the Zambian community-based sample, men remain less likely to want to not have a(nother) child as compared to women, contraceptive use appears to adhere more to women's fertility preferences than to their partner's fertility preferences. In the

Zambian facility-based sample, contraceptive use is lower than women's stated fertility preferences beginning at parity 1. The fact that both facility-based samples demonstrate contraceptive use patterns that are not consistent with their fertility preferences among this population already receiving health services points to a possible area of intervention among an already identified population. Increased contraceptive education and access among this population would be able to take place with minimal additional interventions as these individuals are already getting health services. Increased investment here is further justified because unwanted pregnancies occurring within this population are also resource-intensive to make sure that the mother does not transmit HIV to her baby and possibly further endanger the health of an already at-risk population.

Reasons for contraceptive non-use among those who are not using contraception and who do not want to become pregnant deserves urgent attention as these women are at risk of unwanted pregnancies. Some of these women who do become pregnant and who do not want to be pregnant may attempt to end their pregnancies through unsafe abortion, endangering their health and possibly taking their lives. Better education about side effects and other health concerns that women have might reduce contraceptive non-use of this at-risk population. This education should be tailored to the HIV-positive population on ARTs as ARTs can interfere with hormonal contraceptive use. Husband opposition, only a reason for contraceptive non-use among the community-based sample in Nigeria, deserves further interventions as this opposition is a type of reproductive coercion which leaves the woman vulnerable to unwanted pregnancies against her will. The reasons for not having sex which include infrequent sex and not having sex should also be discussed with women as even infrequent sex places women at risk of an unwanted pregnancy and women not having sex may start having sex again at any point. The fact that some of these respondents who do not want to be having more children and who are not using contraception got pregnant attests to the risk that these respondents have to an unwanted outcome.

The primary reasons for continuing childbearing have to do with wanting to lead a normal life and to reach one's desired family size. The prevalence of these reasons for continued childbearing look very similar between the community-based samples who, for the most part, do not see themselves at risk of HIV and the HIV-positive sample. The greater differences appear to be between Nigeria and Zambia than between the community-based samples and the facility-based samples, suggesting that culture rather than HIV-status, are more likely to determine childbearing preferences. Broadly interpreted, it suggests that reproductive behavior is more likely to look similar within any particular culture rather than HIV-status determining what reproductive behavior may look like across various cultures.

In sum, continued childbearing among HIV-positive women may be being encouraged by their partner's desires to continue childbearing in Nigeria whereas in Zambia, partner's preferences do not depress contraceptive use in Zambia among this population. Women's contraceptive use is not in line with their fertility desires either at the community or at the facility level in neither Nigeria nor Zambia at higher parities, pointing to a specific population at risk and in need of contraceptive interventions to reduce their risk of

unintended pregnancy. This situation is more pronounced in Nigeria as well as with the Zambian facility respondents than with the Zambian community respondents. Reasons for contraceptive non-use among the population who do not want to have any more children, especially within the facility-based population, should be urgently addressed.

Based on this finding, we recommend that couples' communication regarding preferred completed family size be encouraged. This conversation could be encouraged to take place in the clinical setting or ART or contraceptive clients could be encouraged to communicate about these issues once they leave the clinical setting. Whether or not HIV disclosure takes place at that point in time for the HIV-positive population would be up to the client to decide. This communication is most urgently needed among the HIV-positive population since the consequences of pregnancy, including unwanted pregnancy, are more severe than for a largely healthy population. Especially in Nigeria, male partners of HIV-positive women should be sensitized to the risks of wanting more children with an HIV-positive woman, namely exposing himself to the risk of contracting HIV and exposing his partner to the possible detrimental health consequences of a(nother) pregnancy. Large family-size norms, while they have been decreasing, place greater health burdens on HIV-positive individuals to try to lead a normal life and achieve their desired family size, potentially orphaning a greater number of children when they do pass away if they are not able to indefinitely prolong their lives on ARTs.

Limitations include that women's perceptions of their partner's fertility preferences may not, in fact, accurately reflect their partner's fertility preferences. Women may be basing their assumptions off of incomplete or false information. The couples' data from the community-based sample (approximately 500 paired couples from each country) which we have not yet analyzed will provide greater information on the accuracy of women's perceptions of their partner's fertility preferences. We have not yet incorporated into this analysis any description of the duration of the union therefore whether or not the woman's partner's fertility preferences are to play a major role in the woman's fertility decision-making will likely vary greatly woman to woman based on the importance of that union in the woman's life. If women have more than one partner, we do not know how they interpreted the questions on their partner's fertility preferences since more than one partner may have conflicting fertility desires. The data does not distinguish between total parity and parity with that particular partner. Therefore, while the woman may have had a number of children with a previous partner, she may not have had any children with her current partner which may influence her and her partner's fertility preferences in the current union. We have not yet incorporated husband's HIV status into our examination of women's childbearing preferences which might also contribute to a woman's desire to continue childbearing.

Future work on these data will include significance testing which will allow us to describe which of these relationships identified here are actually significantly different within as well as across these four different samples. We also plan to incorporate in the analysis whether contraceptive use is being used for spacing or limiting to get a better grasp of what it means to be using contraceptive use in relation to fertility preferences. Finally, logistic regression will allow us to identify the specific contribution of the

woman's fertility desires as compared to her partner's fertility desires on contraceptive use as well as how perceived HIV risk may influence contraceptive use among the community-based sample and how partner's HIV status might influence contraceptive use among the HIV-positive population.

Table 1. Description of Sample (Percents)				
	Nigeria		**Zambia**	
	Community	Facility	Community	Facility
	N=1257	N=206	N=1280	N=151
Marital Status				
Married	53	55.8	65.2	44.4
Living with a man	4.5	5.3	1.4	0.7
Not in Union	42.5	38.8	33.3	55.0
Age				
15-19	15.7	1.0	11.0	1.3
20-24	23.2	13.3	20.7	11.9
25-29	21.4	27.6	21.5	19.9
30-34	12.6	32.5	15.9	22.5
35-39	11.5	14.3	13.1	22.5
40-44	7.5	7.9	9.9	9.9
45-49	7.8	3.4	7.9	11.9
50+	0.2	0.0	0.1	0
Education				
No education	18.2	11.2	8.0	4
Incomplete primary	17.1	14.1	27.5	21.2
Completed primary	40.8	36.9	43.5	51.0
Some higher	17	24.3	9.9	23.9
Not determined	6.9	13.6	11.1	0
Residence				
Urban	65.2	80.5	44.5	71.5
Rural	34.8	19.5	55.5	28.5
Current employment status				
Only money	35.1	43.4	24.9	31.8
Both money and in kind	18.5	14.1	3.5	5.3
Only in kind	7.4	2.4	1.2	6.0
None	39.0	40.0	70.4	57.0
Religion				
Catholic	28.4	33.0	25.2	26.0
Protestant	20.4	24.6	50.4	48.7
Pentacostal/Charismatic	17.8	20.7	14.4	14.7
Other Christian	5.4	4.9	6.7	9.3
Muslim	27.1	15.8	0.2	0.0
Other	1.0	1.0	3.1	1.4
Parity				
None	41.1	26.2	25.5	6.6
1-2	21.8	32.5	23.5	36.4

3-4	19.3	26.7	21.5	30.5
5-6	9.5	10.2	14.9	13.2
7-8	4.4	3.0	8.7	9.9
9+	3.7	1.5	6.1	3.3
Number of children alive				
None	42.4	32.0	26.8	9.3
1-2	23.3	35.5	25.3	44.4
3-4	19.8	24.7	24.2	28.5
5-6	8.9	6.8	14.5	10.6
7-8	3.5	0.5	7.0	5.3
9+	2.1	0.5	6.7	2.0
Does woman want another child?				
Yes	76.1	75.3	62.1	34.4
No	23.9	24.7	37.9	65.6
Does partner want another child?				
Yes	70.3	74.2	68.8	41.0
No	29.7	25.8	31.2	59.0
Risk of contracting HIV/AIDS				
No risk at all	55.8		39.3	
Small	15.0		30.5	
Moderate	4.2		4.6	
Great	3.1		5.3	
Has AIDS	0.2		2.0	
Don't know	11.5		6.2	
Missing	10.3		0.3	

Figure 1. Women's probability of using contraception based on her fertility preferences and her perceptions of her partner's fertility preferences.

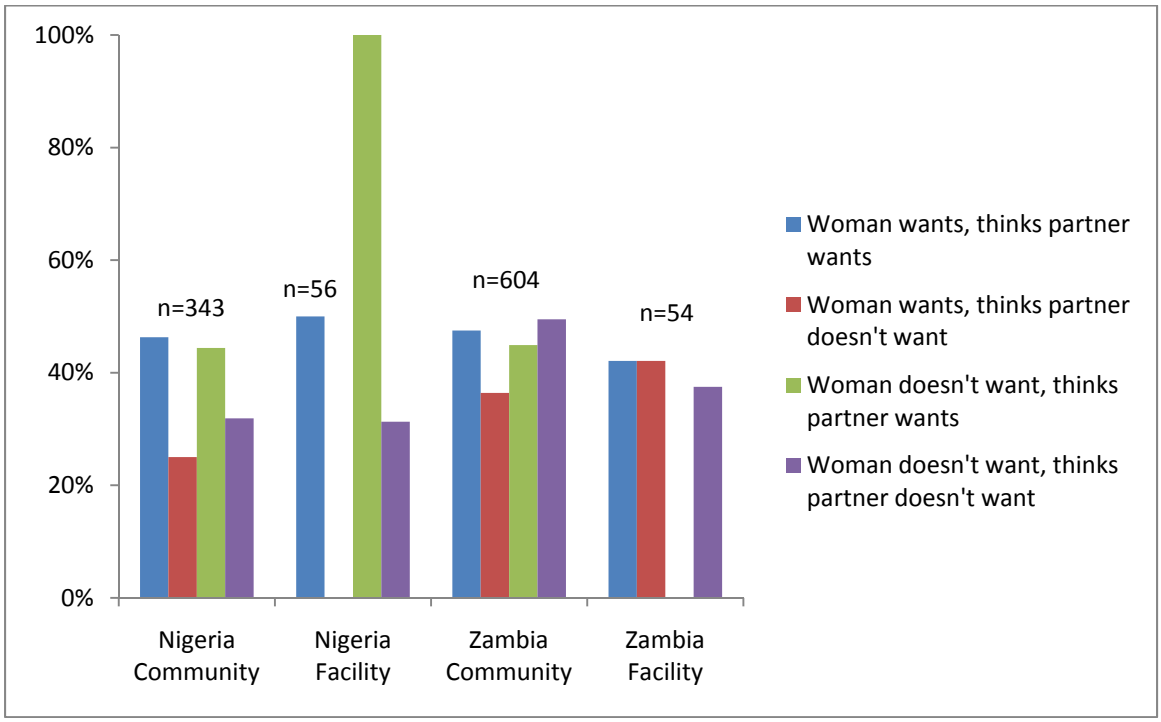


Figure 2. Does the respondent want another child as compared to whether her partner wants another child according to parity, and is contraception being used.

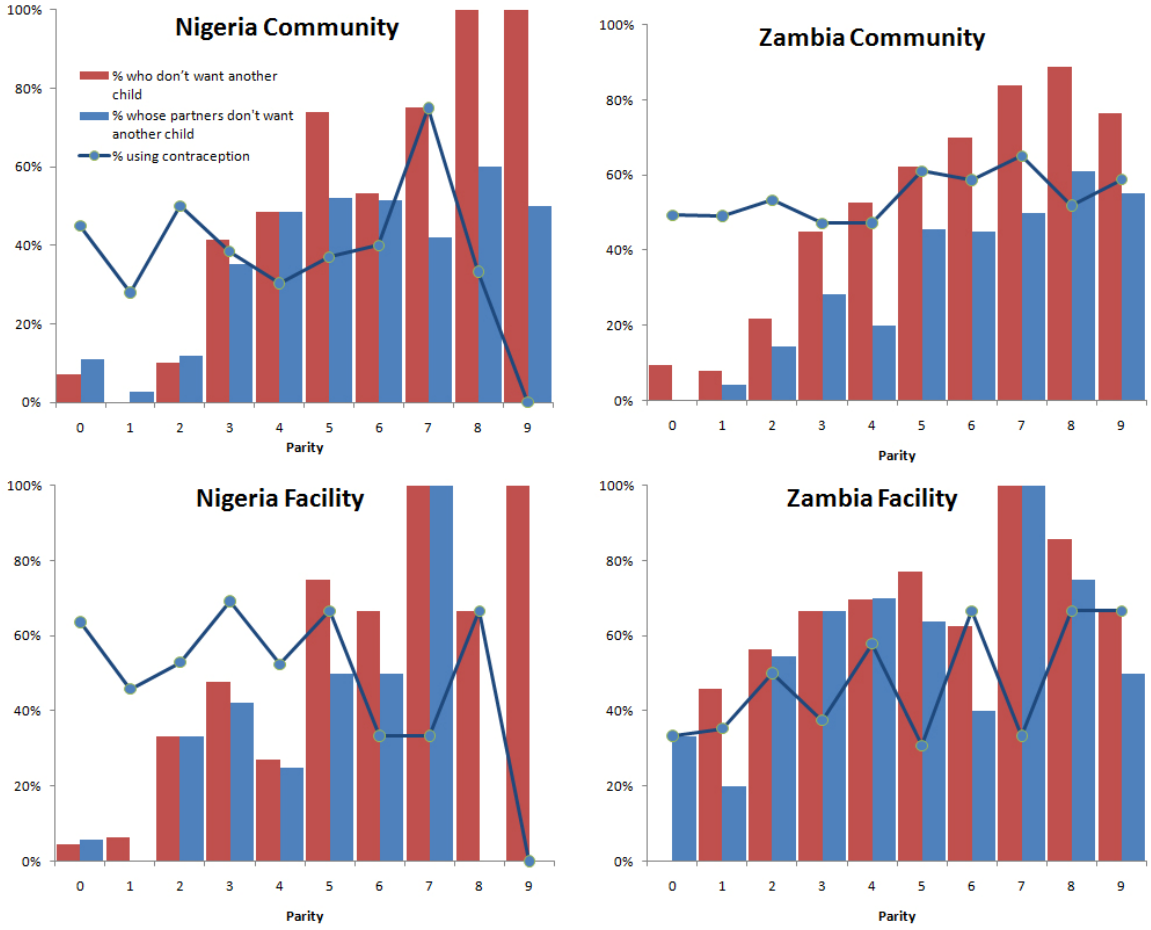
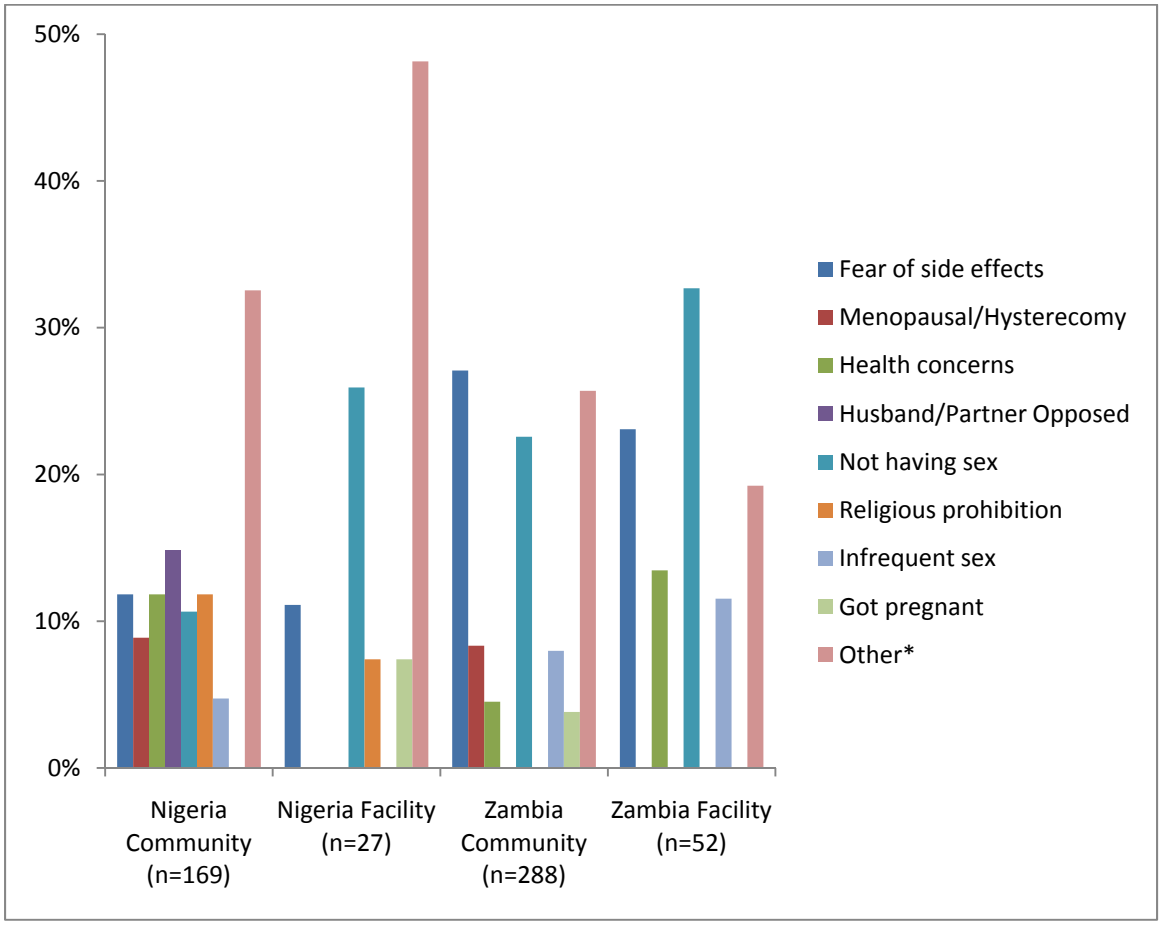
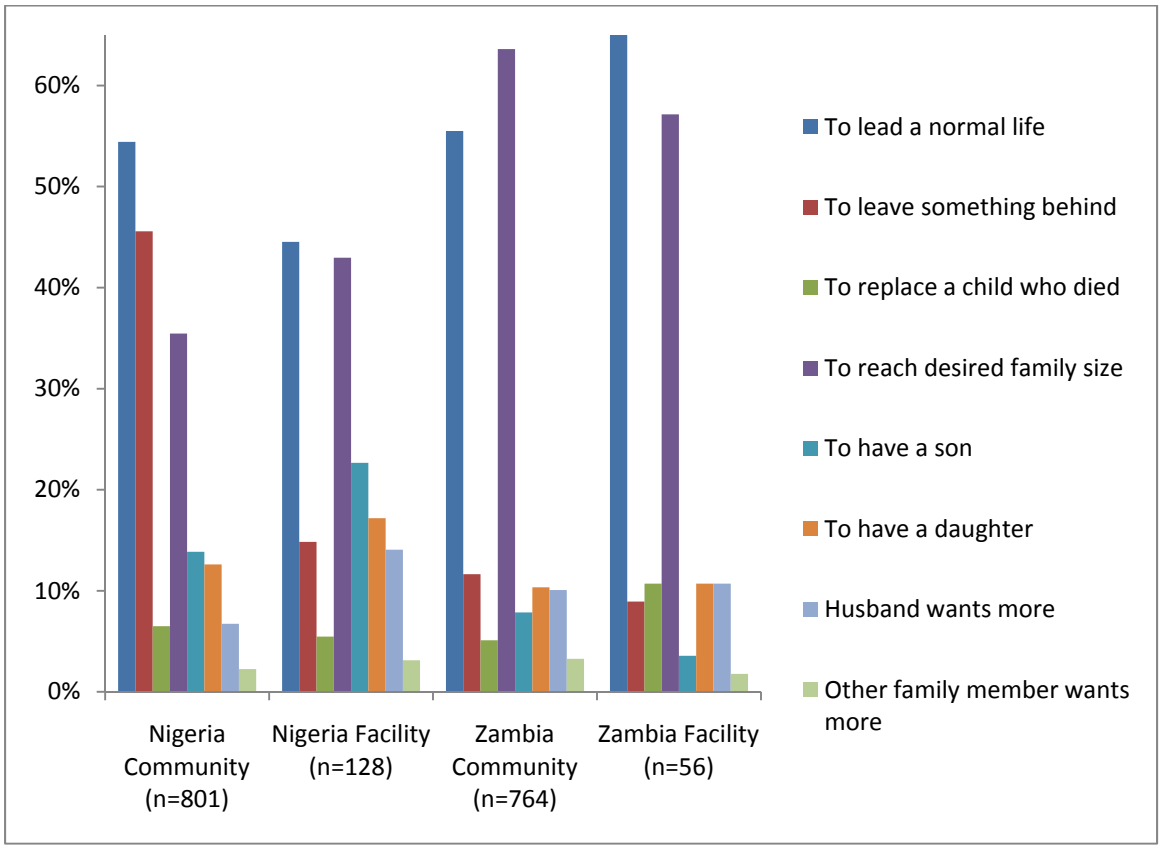


Figure 3. Reasons for contraceptive non-use among those who want no more children.



*Includes others opposed, wants to get pregnant, interferes with body's normal processes, inconvenient, supply problems, don't know, and other.

Figure 4. Reasons for wanting more children among those women who want more children (respondents could mark all that apply).



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