Individual-level transitions in modern contraceptive need categories among women in Rakai, SW Uganda.

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Background

Uganda has one of the highest annual population growth rate in the world, at 3 percent, with a Total Fertility Rate of 6.2 children per woman as of 2014. The Uganda Demographic and Health Survey of 2011 showed that only 26% of currently married women use modern contraception and 34% have an unmet need for family planning. Most cross sectional estimates of unmet need do not allow determination of within-individual changes over time in women's contraceptive needs, and its determinants. Understanding and monitoring need for contraception and its adoption by those in need are important for health and development planning.

Objective

We investigated individual transitions in modern contraceptive need categories, focusing on use, discontinuation and adoption of contraceptives among women aged 15-49 years enrolled in a community cohort followed between 2002 and 2011 in Rakai District, southwestern Uganda.

Methods

We used data from an open community-based annual cohort, the Rakai Community Cohort Study (RCCS), which enrolls and uniquely identifies consenting residents in 50 communities.

Sexually active women were grouped in three categories at each survey round;- having no need of modern contraception as they desired a child or were pregnant, were using modern contraception or had unmet need for modern contraception. A transition was defined as being in any of the three categories at the start of a follow up period, to subsequent survey interview when she reported to be in another or the same category.

Analysis examined within-individual transitions over successive surveys, utilizing data from six RCCS survey rounds conducted between 2002 and 2011. Within individual transitions were assessed using Multi-state models in R, based on Markov assumptions fitted to estimate unadjusted and adjusted transition probabilities. Adjustments were made for individual specific covariates that included age, HIV status, marital status, education, number of living children and social economic status.

We also assessed the proportion of women in each of the three categories who had an unwanted pregnancy by the subsequent survey round.

Results

A total of 7,190 sexually active women aged 15-49 years were included in these analyses.

The majority of women lived in rural communities, were between 15-29 years of age, married and had 3-5 living children.

Women with no need for modern contraception had a probability of 46% of remaining in this category at a subsequent survey round, a probability of 26% of adopting modern contraception and a probability of 28% of having unmet need for modern contraception.

Modern contraceptive users had a probability of 59% of continuing to use a modern contraceptive method at a subsequent survey round, a probability of 20% of discontinuing use and having an unmet need for contraception and a probability of 21% of discontinuing use because they had no need for contraception.

Women with unmet need for modern contraception had a probability of 56% of having persistent unmet need at a subsequent survey round, a probability of 26% of adopting modern contraception and a probability of 19% of having no need for contraception.

There were significant differences in transition probabilities by age, HIV status, marital status, education, number of living children and social-economic status.

Persistent unmet need was greater among the older women, the HIV-negative, the married, those with no education, the ones with higher number of living children and those with low social economic status.

Consistent use of contraception was higher among the older women, the HIV positive, those not married, those with higher levels of education and those with higher number of living children.

Unwanted pregnancies were highest among women with unmet need at the prior survey round (15.8%) compared to those using modern contraception (10.6%) or those who had no need of contraception (3.4%).

Knowledge contribution

The majority of women with unmet need for modern contraception had persistent unmet need at subsequent survey rounds, with a probability of only 26% of initiating use of modern contraceptives. According to UDHS 2011 there were significant increases in population level contraceptive use in this region but our results indicate that at an individual level, adoption of contraception among those with unmet need is very low. A substantial proportion (20%) of women who discontinued using modern contraception had unmet need for contraception at the subsequent survey round. The rate of unwanted pregnancies was also observed to be highest among women with unmet need at a prior survey compared to the contraceptive users.

The persistent unmet need in the Rakai population suggests that women should be targeted for family planning throughout their reproductive years. There would be net benefits to women and society by averting unintended pregnancies with increased investment in service outlets that target especially those women with persistent unmet need.

Table 1: Individual level transition probabilities of contraceptive need categories between surveys rounds

Beginning of Interval	Transition probabilities at subsequent survey round		
Modern Contraceptive need category	No need/pregnant	Uses modern contraception	With unmet need
No need/pregnant	0.46	0.26	0.28
Uses modern contraception	0.21	0.59	0.20
With Unmet need	0.19	0.26	0.56

Table 2: Adjusted transition probabilities of contraceptive need categories among women using modern contraception between survey rounds

	Transition probabilities at subsequent survey round		
Adjusting for	No need/pregnant	Uses modern contraception	With unmet need
Age			
15-29	0.31	0.51	0.18
30-39	0.12	0.67	0.21
40-49	0.05	0.67	0.29
HIV Status			
Negative	0.23	0.57	0.20
Positive	0.12	0.70	0.19
Marital Status			
Married	0.21	0.58	0.21
Not Married	0.20	0.60	0.20
Education			
None	0.12	0.47	0.41
Primary	0.15	0.54	0.31
Post Primary	0.19	0.58	0.22
Number of living children			
None	0.60	0.32	0.08
1-2	0.43	0.45	0.12
3-5	0.29	0.54	0.17
6+	0.18	0.61	0.22
Social Economic Index			
Low	0.19	0.56	0.24
Medium	0.20	0.57	0.22
High	0.21	0.58	0.21

Table 3: Adjusted transition probabilities of contraceptive need categories among women with unmet need for modern contraception between survey rounds

	Transition probabilities at subsequent survey round		
Adjusting for	No need/pregnant	Uses modern contraception	With unmet need
Age			
15-29	0.27	0.31	0.42
30-39	0.13	0.25	0.62
40-49	0.07	0.15	0.78
HIV Status			
Negative	0.19	0.25	0.56
Positive	0.12	0.43	0.46
Marital Status			
Married	0.19	0.24	0.57
Not Married	0.17	0.35	0.48
Education			
None	0.15	0.11	0.74
Primary	0.17	0.17	0.67
Post Primary	0.18	0.25	0.57
Number of living children			
None	0.64	0.24	0.12
1-2	0.46	0.29	0.25
3-5	0.30	0.29	0.41
6+	0.17	0.26	0.57
Social Economic Index			
Low	0.17	0.19	0.64
Medium	0.18	0.22	0.60
High	0.19	0.27	0.55