Explaining Inequity in the Use of Family Planning Services in sub-Saharan Africa

David Hotchkiss, PhD, and Mai Do, DrPH
Tulane University, School of Public Health, Department of Global Health Systems and
Development

Background

Over the past few years, country governments and international donors have placed increased
emphasis on improving equity in the use of family planning and other types of reproductive
health care services. Strategies that are available to improve equity of family
planning/reproductive health services include market segmentation approaches, community-level
service provision, and innovative demand-side approaches, such as health insurance and voucher
programs. Despite the increased emphasis on equity, few studies have assessed the degree of
equity in the use of family planning services (Gillespie et al. 2007 and Hotchkiss et al. 2011 are
exceptions), and as far as we know, no study has explained inequity in the use of family planning
services through decomposition of the contributions made by various individual- and household-
level factors, including wealth and health insurance coverage.

Research Questions

The purpose of this study is two fold: 1) to assess the degree of socio-economic inequity in the
use of family planning services in selected sub-Saharan African countries, and 2) to explain
socio-economic inequity in the use of family planning (FP) services in these countries by
decomposing inequity by the contributions made by various components, including wealth,
health insurance coverage, and other individual- and household-level factors.

Data

The study will be based on three selected countries in sub-Saharan Africa with data from the
Demographic and Health Survey (DHS). Countries are selected based on the following inclusion
criteria: 1) having a recent DHS of women of reproductive age conducted within the last five
years with information on modern contraceptive use, wealth, and health insurance coverage, and
2) having a national health insurance program that includes FP services in the basic benefits
package. Countries that meet these criteria and may be included in this study are Kenya (2008-
2009), Nigeria (2008), and Rwanda (2010). At the time of this abstract, preliminary analysis has
been carried out using the Nigeria 2008 DHS. The analysis will be replicated with the other two
countries.

Methodology

Inequity is measured as horizontal inequity, taking into account the fact that individuals have
different needs for FP services and therefore, may use the services at different levels (van
Doorslaer et al., 1997; Wagstaff et al., 2001). In this analysis, information on household assets is

used to construct wealth quintiles for all women of reproductive age, and then separately for rural women and urban women. Concentration indices will be used in each country to calculate the degree of socio-economic inequity in the use of FP services by wealth. Because needs for FP may vary by socio-economic status (SES), the values of these concentration indices will be standardized for the need for family planning. Concentration indices, therefore, will reflect the extent of horizontal equity in FP use (O'Donnell et al., 2008). In this analysis, need variables include an indicator of need for FP, women's education, parity, and women's age. The indicator of need for FP is calculated based on individual information on current pregnancy (if a woman is currently pregnant), the wantedness of the pregnancy or the last child, and desire for more children. Women who were pregnant at the time of the survey and stated that the pregnancy was wanted, or who stated a desire for children within the next two years or that they were infecund are considered as having no need for FP; everyone else is considered as having a need for FP. Non-need factors that may confound the relationships between need and FP service utilization will be controlled for. Non-need factors controlled for in this analysis include: household wealth, urban residence, partner's education, women's employment, religion, whether a woman was visited by a FP worker or visited a health facility herself within the last twelve months, exposure to FP messages on a number of common media, and finally, having health insurance coverage.

We will then use multivariate methods, outlined by O'Donnell et al. (2008), to decompose the concentration indices by the contributions made by need and non-need factors. Of particular interest is whether health insurance coverage contributes to lower inequity in modern FP use. In other words, the decomposition method reveals the extent to which unstandardized concentration indices can be explained by inequalities across wealth quintiles in need and non-need factors, including having health insurance coverage that includes family planning services in the basic benefits package. All analyses are carried out using Stata/SE version 11 (StataCorp, 2009).

Results

As mentioned above, preliminary analysis has been carried out for Nigeria, with plans to replicate the analysis in the other two countries. This section discusses results from the Nigeria's analysis.

Table 1 presents the proportions of women in union who were using a modern method of contraception, by household wealth quintile and health insurance status. Modern contraceptive use increases with household wealth quintile; the proportion of women with health insurance who were using modern contraceptives is nearly three times higher than that among women without health insurance. With the exception of the two poorest quintiles, within each quintile, modern contraceptive use is also higher among women with health insurance than among those without health insurance.

Table 1 about here

Table 2 shows unadjusted, need predicted, and need standardized concentration indices of modern contraceptive use among Nigerian women in union. This table shows substantial levels

of inequity – a pro-rich distribution of modern FP use – before and after standardization for need. Because need for FP services is concentrated among the better off, need-predicted concentration index, albeit lower than actually observed, still shows a pro-rich distribution of FP use. Standardization for need significantly lowers the concentration index, yet the level of inequity is still substantial at 0.44.

Table 2 about here

In Table 3, we present results of the decomposition, based on a multivariate regression model, of the concentration index to the contributions made by need and non-need variables for all women in union. Column 1 shows the elasticity of FP use with respect to each of the need and non-need variables; in other words, it shows the extent to which FP use is responsive to each variable. Column 2 shows the concentration index of each variable – how each variable varies across wealth quintiles. Finally, column 3 shows the contribution of each variable to the unadjusted concentration index, which is the product of columns 1 and 2.

Table 3 about here

The results in Table 3 show that household wealth, women's education, and partner's education contribute the most to the concentration index. The positive contributions by women's and men's education are due to both the relatively high elasticity of FP use with respect to education and the variations of education by wealth. Parity and exposure to FP messages on newspapers have negative contributions to the concentration index of FP use. It means that if FP use were only determined by either or both of these factors, it would be pro-poor.

Table 3 also shows that modern FP use varies markedly by need for FP and religion. However, because these factors do not seem to vary substantially across wealth quintiles, they do not make significant contribution to the FP use concentration index. On the contrary, several factors, including urban residence and exposure to FP messages on the radio and posters varies across wealth quintiles, yet modern FP use does not seem sensitive to these factors. Similarly, health insurance coverage varies significantly across wealth quintiles, but since modern FP use does not vary with health insurance coverage, it hardly makes any contribution to the FP use concentration index.

Table 4 shows concentration indices and results of the decomposition separately for urban and rural women. Inequity in FP use seems substantially higher within rural areas compared to urban areas, whether it is standardized for need. Women's education and wealth remain the most important contributors to the concentration indices among both urban and rural women. Similarly to the overall results, parity and exposure to FP messages on newspapers also have negative, although very small, contributions to the concentration indices in urban and rural. Partner's education only makes a contribution to the concentration index among rural women.

Finally, having health insurance does not contribute significantly to the concentration indices in both urban and rural.

Table 4 about here

Discussion

This study aims to assess the degree of socio-economic inequity in the use of family planning services and to explain such inequity by the contributions made by various individual and household-level factors in selected sub-Saharan African countries. Preliminary analysis had been carried out for 2008 Nigeria DHS. Similar analyses will be implemented in Kenya and Rwanda, where a recent survey of women of reproductive age on contraceptive use and information on health insurance are available.

Results from Nigeria show a substantial level of horizontal inequity, measured by concentration indices, in FP use among all women in union, as well as among urban and rural women separately, although inequity seems lower in urban than in rural areas. The main factor of interest, health insurance, is not found to have made a significant contribution to the concentration indices. In other works, having health insurance that covers FP (The Nigerian Doctor, 2009) not increase or lower socio-economic inequity in modern FP use in Nigeria. On the other hand, women's education and wealth continue to be significant contributors to inequity among both urban and rural women. Partner's education is also important, but only among rural women.

It should be noted that because of the cross-sectional nature of the data, the results of this analysis show associations between inequity in FP use and various individual factors rather than causal relationships between them. Nevertheless, the results still offer important policy implications to those responsible for improving family planning equity. For example, in Nigeria, improving education for women, particularly those in the lower socio-economic groups, is still a strategic approach to increasing equity in FP use. In rural areas, improving men's education may also be an important strategy to improving FP use equity.

Health insurance coverage of FP methods can potentially increase the overall level of FP use and lower socio-economic inequity in FP use. Results from Nigeria show significant variations of health insurance by wealth quintile, yet FP use does not depend on health insurance coverage. It is perhaps due in part to the low level of modern contraceptive use in Nigeria at the time of the survey (8.6% among women in union). In addition, among the most commonly used methods of contraception (oral pills, condoms, and injections – results not shown), it is possible that oral pills and condoms are obtained without using health insurance. Therefore, it may be necessary to review the design of health insurance programs to better target the poor and improve coverage for contraceptive methods that are commonly used.

References

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Table 1. Proportion of women in union currently using a modern contraceptive method by health insurance status and household wealth, Nigeria, 2008.

Household wealth	Health insurance status		Total
	No	Yes	
Poorest	1.40	0.00	1.40
Poor	2.89	0.00	2.88
Middle	6.27	24.04	6.37
Richer	12.12	15.45	12.16
Richest	19.33	25.04	19.74
Total	7.85	23.22	

Table 2. Concentration index of modern contraceptive use among women in union across household wealth quintiles, Nigeria, 2008.

	Concentration index (C.I.)	S.E.	95% confidence interval
Actual	0.51	0.013	0.49 – 0.54
Need predicted	0.14	0.002	0.14 – 0.15
Need standardized	0.44	0.013	0.41 – 0.46

Table 3. Results of the decomposition of modern contraceptive use inequity among women in union, by need and non-need variables, Nigeria, 2008 (n=23,954).

Variables	Elasticity	Concentration Index	Contribution
	(1)	(2)	(3)
Need variables			
Need for family planning	.40	.02	.01
Women's education	.28	.42	.16
Parity	.33	-.05	-.02
Women's age	.18	.02	.003
Non-need variables			
Wealth	-.05	-3.99	.19
Urban residence	.06	.52	.03
Partner's education	.21	.34	.10
Women's employment	.18	.06	.01
Religion	-.90	-.05	.04
Visited by a FP worker in the last 12 months	.01	.06	.00
Visited a health facility in the last 12 months	.03	.20	.01
Exposure to FP messages in the last few months on:			
TV	.09	.34	.03
Radio	.04	.64	.02
Newspapers	-.01	.71	-.01
Posters	.11	.52	.01
Peer discussions	.10	.20	.02
Have health insurance	.002	.78	.001

Table 4. Results of the decomposition of modern contraceptive use inequity among rural and urban women in union, by need and non-need variables, Nigeria, 2008.

Variables	Urban (n=6,586)	Rural (n=17,368)
Concentration Index (s.e.)		
Actual	.29 (.003)	.49 (.002)
Need predicted	.06 (.004)	.15 (.002)
Need standardized	.25 (.02)	.41 (.02)
Need variables		
Need for family planning	.003	.01
Women's education	.12	.13
Parity	-.03	-.01
Women's age	.001	.002
Non-need variables		
Wealth	.17	.13
Partner's education	.04	.11
Women's employment	.01	.005
Religion	.03	.03
Visited by a FP worker in the last 12 months	-.001	.001
Visited a health facility in the last 12 months	.01	.002
Exposure to FP messages in the last few months on:		
TV	.01	.04
Radio	.04	.01
Newspapers	-.01	-.001
Posters	.01	.01
Peer discussions	.01	.02
Have health insurance	.002	.001