

Influence of Gender Measures on Maternal and Child Health in Africa



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TECHNICAL REPORT

Influence of Gender Measures on Maternal and Child Health in Africa

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Table of Contents

	Executive Summary	iii
Chapter 1	Introduction and Background	1
1.1	Importance of the Topic	1
1.2	Gender Equality Measures and Health Outcomes	5
1.3	Gender Measures and Low BMI (Maternal Health Outcome)	6
1.4	Gender Measures and Facility Delivery (Utilization of Maternal Health Services)	7
1.5	Gender Measures and Immunization Services and Treatment for ARIs (Utilization of Child Health Services)	7
Chapter 2	Data and Descriptive Analysis	9
2.1	Available Gender Measures—Autonomy and Social Norms	9
2.2	Outcome Measures	12
2.3	Socioeconomic Variables	14
Chapter 3	Bivariate Analysis	15
3.1	Bivariate Analysis for Low BMI	15
3.2	Bivariate Analysis for Facility Delivery	16
3.3	Bivariate Analysis for Fully Immunized Child	17
3.4	Bivariate Analysis for Treatment for an ARI	18
Chapter 4	Multivariate Analysis	21
4.1	Findings for the Multivariate Analysis for Low BMI	21
4.2	Findings for Multivariate Analysis for Facility Delivery	22
4.3	Findings for Multivariate Analysis for Fully Immunized Child	22
4.4	Findings for Multivariate Analysis for Treatment for an ARI	23
4.5	Sub-Analysis for the Nigerian Sample of Women	23
Chapter 5	Conclusion and Policy Implications	27
	References	29
	Appendix A	33
	Appendix B	37
	Appendix C	45
	Appendix D	55

Executive Summary

The Millennium Development Goals (MDGs) recognize the interdependence of gender issues, maternal and child health, poverty reduction, and developmental progress; yet few of the goals are on track for achievement by 2015. Specifically, MDG 3 (promoting gender equality and empowering women) is focused on eliminating gender disparity at all levels of education by 2015, but progress has not been as great as anticipated. MDG 5 (improving maternal health), Target 5A, is to reduce by three quarters, between 1990 and 2015, the maternal mortality ratio (MMR); yet the decrease from the 542,424 deaths in 1990 to the World Health Organization's (WHO) estimate of 358,000 in 2008 represents only a 34% decline. The majority of maternal deaths can be prevented if women had access to emergency obstetric care. MDG 4 (reduce child mortality), Target 4A, is to reduce by 2/3 the under-five mortality rate. The decline from 12.4 million deaths in 1990 to the United Nations Children's Fund's (UNICEF) estimate of 8.1 million deaths in 2009 represents only a 33% reduction. It is estimated that about 2/3 of under-five deaths can be easily prevented. Though the treatment and preventative measures to save these children are largely known, access to such services is an obstacle for many around the world. While Africa accounts for only 15% of the world's population, it suffers 58% of maternal deaths and 51% of under-five deaths.

While research has demonstrated a clear positive relationship between gender measures and a woman's ability to seek and advocate for services for both herself and her children, only a handful of studies have focused on African women. This report explores associations between gender measures and four health outcomes which include (1) low Body Mass Index (BMI), an indicator of overall maternal health; (2) birth in a facility, an indicator of the utilization of maternal health services and a proxy measure for maternal mortality; (3) having a child who is fully immunized, an indicator of the utilization of a preventive child health service; and (4) treatment-seeking for a child with an acute respiratory infection (ARI), an indicator of the utilization of a curative child health service. It looks at a diverse set of eight African countries for which recent Demographic and Health Survey (DHS) data were available: Democratic Republic of the Congo (DRC), Egypt, Ghana, Liberia, Mali, Nigeria, Uganda, and Zambia.

Studies examining the relationship between gender inequality and health have consistently found that gender-related factors have an effect on health outcomes that is independent of education, economic status, religion and other social factors. Simpler measures of gender equality capture aspects of behavior or attitudes, and are now part of survey mechanisms such as the DHS. These are based on combining a few items to measure constructs such as household decision making and access to economic resources. Most gender equality measures include an element of women's self-efficacy, reflecting women's ability to make choices. This report focuses on areas of gender equality known to affect health outcomes for women and children which are available in the DHS data, specifically, women's autonomy within the context of household and financial decision making and social norms regarding attitudes

towards wife beating and refusing sex. Several socioeconomic variables are also examined including age, parity, residence (urban/rural, a rough proxy for access to services), education level, wealth quintile, and working status. Age and gender of the index child are also included in models of child health service utilization. A series of multivariate logistic regressions were used to study the effect of the gender equity measures on the health outcomes, controlling for the socioeconomic variables.

The strongest associations were between the outcome variables involving access to health facilities (facility delivery, full immunization, and treatment for acute ARI) and the predictor variables education and wealth, both factors associated with much higher likelihood of access. These findings demonstrate the particular importance of the education and wealth variables for the health outcomes examined. In addition to being important in and of themselves, education and wealth can be seen as inputs into the empowerment process. Key findings were that in five of eight countries examined, household and financial decision-making authority were significantly associated with women's general health as measured by low BMI; decision-making authority and attitudes towards gender roles were significantly associated with facility delivery in Nigeria; and attitudes towards gender roles were significantly associated with facility delivery in both Ghana and Uganda. The only gender equity measures significantly associated with a child being fully immunized were the household decision making and wife beating never acceptable variables in Nigeria. Gender equity measures were not significantly associated with treatment for an ARI except in the DRC (where high decision-making authority was protective) and Zambia (where belief that a wife does not have a right to refuse sex was associated with lower likelihood of treatment), though sample sizes for treatment for an ARI were relatively small and are a limitation of the analysis.

That gender equity measures were significant in some countries even after controlling for education and wealth, suggests that programs and policy should facilitate empowerment in addition to focusing on educating girls and reducing poverty. Since low BMI is often a sign of chronic energy deficiency (CED), women who are consistently able to make decisions and have a financial say may be in a better position to take care of themselves. It could be that gender measures have more influence on overall health than on access to services at certain points in time. Also, this study lacked a variable for accessibility or distance to the nearest facility, which is often a key factor in the ability to seek services. It could be that more empowered women are more able to access services, but if the services are not accessible to begin with then gender would not be a factor.

Recommendations from this report would be for programs and policies to continue focusing on education and poverty reduction and increasing access to services. In addition, programs focused on gender measures can have benefits that go beyond programs focused only on education and poverty reduction. In the countries studied, gender measures were particularly important for a woman's own health. Countless studies have shown the influence of a woman's health on her pregnancy, birth outcomes, and children's health. Findings from this report provide clear evidence of the importance of promoting gender equity as a means to improve both maternal and child health in Africa and as a means to help countries achieve their MDGs.

Chapter 1 Introduction and Background

1.1 IMPORTANCE OF THE TOPIC

Despite progress maternal mortality remains high in developing countries. The WHO estimated 358,000 maternal deaths in 2008, while the Institute of Health Metrics and Evaluation had a similar estimate at 342,900 (WHO, 2010; Hogan et al., 2010). Millennium Development Goal (MDG) 5a is to reduce by 2/3 the maternal mortality ratio (MMR) from 1990 to 2015. The decrease from the 542,424 deaths in 1990 to WHO's estimate of 358,000 in 2008 represents only a 34% decline. The majority of maternal deaths can be prevented if women had access to emergency obstetric care (EmOC)¹. UNICEF (2010) estimates that about 8.1 million children under the age of five died in the year 2009, while the Institute of Health Metrics and Evaluation (Rajaratnam et al., 2010) estimated the number of deaths to be 7.7 million in 2010. MDG 4a is to reduce by 2/3 the under-five mortality rate. The decline from 12.4 million deaths in 1990 to UNICEF's estimate of 8.1 million deaths in 2009 represents only a 1/3 reduction. It is estimated that about 2/3 of under-five deaths can be easily prevented. Though the treatment and preventative measures to save these children are largely known, access to such services is an obstacle for many around the world.

This report explores the associations between gender measures and several health outcomes which include (1) low BMI, an indicator of overall maternal health; (2) birth in a facility, an indicator of the utilization of maternal health services and a proxy measure for maternal mortality; (3) having a child who is fully immunized, an indicator of the utilization of a preventive child health service; and (4) treatment seeking for a child with an acute respiratory infection (ARI), an indicator of the utilization of a curative child health service. Research has demonstrated a clear positive relationship between autonomy and a woman's ability to seek and advocate for services for herself and her children (i.e., Fantahum et al., 2007; Durrant and Sathar, 2000; Kishor, 2000; Bloom et al., 2001; Visaria, 1993; Das Gupta, 1990). Few studies, however, have focused on Africa and on the particular outcomes selected for this report. Those specific studies are presented later in this chapter.

Much of the literature on gender measures in developing countries has focused on Asia. Only a handful of studies have looked at the association between gender measures and health outcomes and health service utilization for African women. This reports aims to fill that gap. Africa only accounts for an estimated 15% of the world's population but 51% of under-five deaths and 58% of maternal deaths. Within Africa, under-five mortality varies widely from 12 deaths per 1,000 children in the Seychelles to 220 per 1,000 in Angola (UNICEF, 2010). Similarly, according to the

¹ Basic EmOC is the ability to provide intravascular/intramuscular (IV/IM) antibiotics, IV/IM anticonvulsants, IV/IM oxytocics, manual removal of the placenta, assisted vaginal delivery and removal of retained products. Comprehensive services include the six basic services as well as ability to provide Cesarean section and blood transfusion. EmOC includes the services and medications to treat the main causes of maternal mortality.

WHO (2010) estimates, maternal mortality ratios (MMRs) vary from 36 maternal deaths per 100,000 live births in Mauritius to 1,200 deaths per 100,000 live births in both Chad and Somalia. Because women's autonomy varies across cultural contexts (Mason and Smith, 2003), a regional exploration was conducted to explore this relationship. This analysis looked at diverse African countries (for which recent DHS data is available)—both English and French speaking—from North, South, East and West Africa. DHS data was examined for eight countries—Democratic Republic of the Congo (2008), Egypt (2008), Ghana (2008), Liberia (2007), Mali (2006), Nigeria (2009), Uganda (2006) and Zambia (2007).

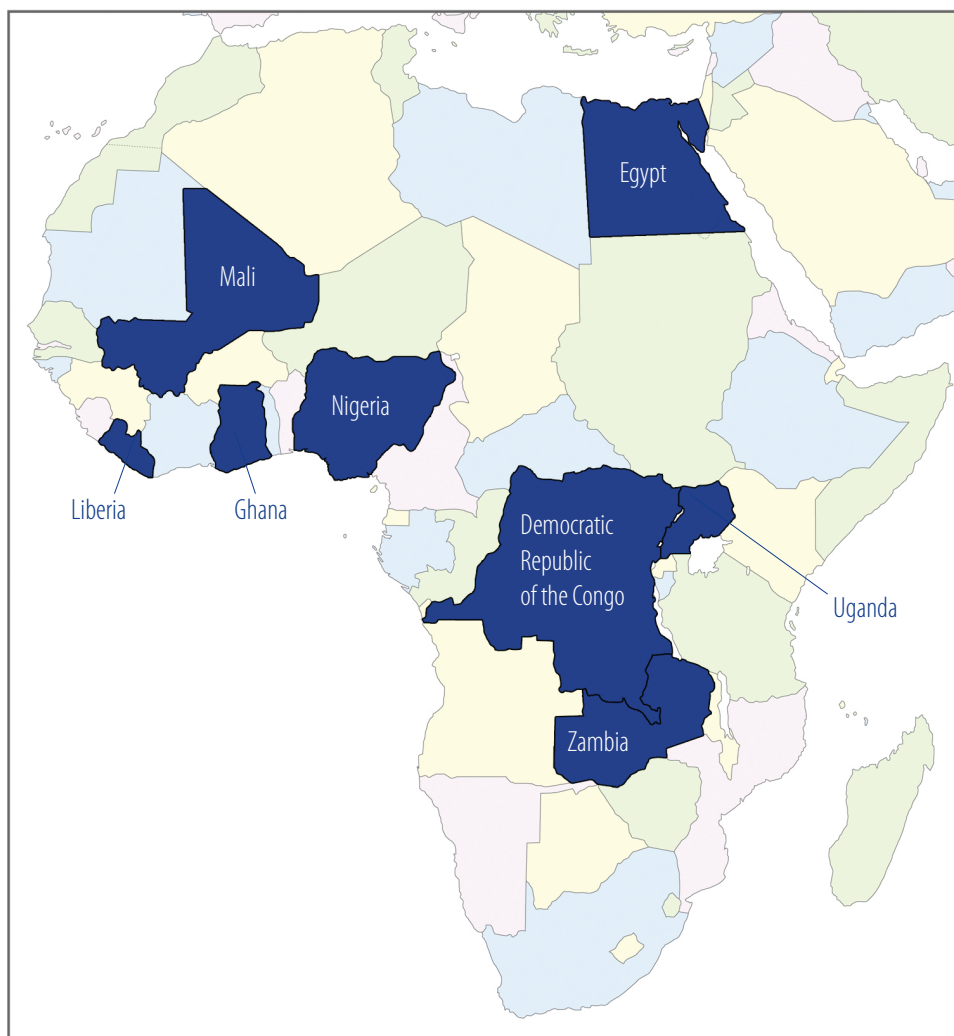
Table 1 below presents data on each of the 8 countries. Figure 1 presents a map of the 8 African countries in this analysis.

Table 1 Description of Countries

	DRC	Egypt	Ghana	Liberia
Total Population	58,300,000	73,400,000	21,400,000	3,500,000
Maternal Mortality	670/100,000	82/100,000	350/100,000	990/100,000
Under-Five Mortality	199/1,000	23/1,000	76/1,000	145/1,000
Life Expectancy	48	70	57	58
Gross National Income per Capita	150	1800	670	170
Human Development Index (HDI) Ranking	176	123	152	169
	Mali	Nigeria	Uganda	Zambia
Total Population	13,400,000	137,300,000	26,100,000	10,900,000
Maternal Mortality	830/100,000	840/100,000	430/100,000	470/100,000
Under-Five Mortality	194/1,000	186/1,000	135/1,000	148/1,000
Life Expectancy	48	48	53	45
Gross National Income per Capita	580	1,160	420	950
Human Development Index (HDI) Ranking	178	158	157	164

Source UNICEF (2010) and WHO (2010)

Figure 1 Map of Countries



The Democratic Republic of Congo (DRC) is a large country of nearly 1 million square miles located in Central Africa. The population of approximately 264 million is quite diverse with about 250 ethnic groups and over 700 local languages. Seventy percent of the population is Christian, and the remaining population tends to follow traditional religions or syncretic sects. French is the official language and Kikongo, Lingala, Tshiluba and Swahili are considered national languages. The DRC obtained independence from Belgium in 1960. The mineral-rich country has experienced armed conflict that has led to the death of millions of civilians due to direct effects of the war or indirect effects such as disease and famine. Sexual violence has also been used as a weapon of war. Several provinces in Eastern Congo are still plagued by conflict.

Egypt is located in North Africa with a small portion of the country, the Sinai Peninsula, forming a land bridge in Southwest Asia. Thus Egypt is often considered to be both part of North Africa and the Middle East. The majority of the 84 million residents live close to the banks of the Nile river. About 90% of the population is Muslim and about 10% Coptic Orthodox Christian. Egyptians account for 91%

of the population. Life expectancy is 71 years and under-five mortality is 23/1000. Egypt is famous for its ancient civilization and was declared a republic in 1953.

Ghana is a country of 28 million people located in West Africa. The official language is English and nine languages are considered government-sponsored languages. About 69% of Ghanaians are Christian, 16% Muslim and 15% follow traditional religions. Ghana became the first African country to obtain independence from Britain in 1957. Ghana is considered a stable democratic country and has experienced two peaceful elections resulting in transfers of power from one fairly elected leader to another.

Liberia, a small country in West Africa with a population of about 3.8 million people, was founded by freed American slaves, Americo-Liberians. The small group of Americo-Liberians ruled the country until a coup in 1980 which led Liberia into a period of instability including two civil wars beginning in 1989 and in 1999. A peace movement called the Women of Liberia Mass Action for Peace was instrumental in ending the war in 2003. Liberia now has the first elected female head of state in Africa. The country is recovering from the devastating effects of two civil wars. Today about 40% of Liberians practice Christianity alone or Christianity with elements of traditional religions, about 40% follow traditional religions and 20% follow Islam. Liberia has 16 ethnic groups as well as several foreign minority groups.

Mali is a landlocked country in West Africa. Much of the country lies in the southern part of the Sahara desert. Mali's population of 12.8 million is largely rural (68%) and an additional 5–10% follows nomadic lifestyles. About 90% of Malians are Muslim, 5% are Christian and another 5% follow traditional religions. French is the official language. Mali ranks 178 out of 182 countries on the Human Development Index (HDI). According to UNICEF under-five mortality is 194/1000.

Nigeria, located in West Africa, is the most populous country on the continent. The population is estimated at 151 million including individuals from more than 250 ethnic groups. While there are more than 521 spoken languages, English is the official language. Fifty one percent of the population is Muslim, 48% Christian and 1% follows other religions. Northern Nigeria is predominantly Muslim, while the Southern Region and the Niger Delta are predominantly Christian. In the middle of the country are large numbers of both Christians and Muslims. Nigeria has a fast growing economy as well as a fast growing population.

Uganda is a country of 23 million individuals located in East Africa. There are several ethnic groups, none of which has a majority. About 40 languages are spoken in Uganda with English an official language and Swahili a second official language. About 84% of the population is Christian and 12% is Muslim. Uganda obtained independence from Britain in 1962. Internal conflict between 1971 and 1985 led to the deaths of hundreds of thousands of individuals. Today Uganda is peaceful with the exception of areas of the North where the Lord's Resistance Army is active. Uganda is seen as a success story in the fight against HIV. According to UNAIDS adult HIV prevalence is now 7.9% down from 15% in 1991.

Zambia is a landlocked country of 11 million inhabitants located in Southern Africa. There are 72 ethnic groups and over 72 languages spoken. About 44% of the population is concentrated in a few urban areas. The majority of Zambians practice Christianity or a mix of Christianity with traditional religions. Zambia obtained independence from Britain in 1964. HIV prevalence in Zambia is 15.4% for the adult population. Life expectancy is 45 years.

1.2 GENDER EQUALITY MEASURES AND HEALTH OUTCOMES

Gender is defined as what society believes about the appropriate roles, duties, rights, responsibilities, accepted behaviors and opportunities of people based on what sex they are. Gender also refers to status of women and men in relation to one another (WHO, 2010a). The parameters of socially acceptable behavior for men and women vary widely between societies, are dynamic over time in the same place, and have far reaching effects on health status. Gender stratification is the measure of separation between the definitions of male and female roles in a given society. The extent to which gender inequality influences health status is generally correlated with the degree of gender stratification in a given place.

It has long been observed that health outcomes are affected by social inequalities relating to ethnicity, class, caste, and education. Gender inequality persists within all of these types of social inequalities. Studies examining the relationship between gender inequality and health have consistently found that gender-related factors have an effect on health outcomes that is independent of education, economic status, religion and other social factors. In the last few years, the importance of addressing gender in health programming has been recognized by multilateral and bilateral agencies. This has resulted in a global push to explore how interventions can best address gender effects on health. MDG 3 is to promote gender equality and empower women. The specific target for this goal is to eliminate gender disparities in primary and secondary education preferably by 2005 and in all levels of education by 2015.

Researchers have been exploring how to quantitatively measure and analyze gender in studies focusing on the relationship between the status of women and various health outcomes. Many gender equality measures have been developed and tested in a variety of contexts, examining a range of health outcomes. The domains of gender equality that have been observed to influence health outcomes include beliefs and attitudes about gender roles, norms pertaining to the way women and men relate to each other in intimate partnerships, women's autonomy (decision-making power, independent access to economic resources, and freedom of movement), and attitudes about or experience of gender-based violence. Some gender measures are complex, capturing a wide variation around a construct, such as the Gender Equitable Men (GEM) scale. The GEM scale necessitates adding 24 items to a questionnaire (Pulerwitz and Barker, 2008). Studies based on primary data collection can choose to employ these complex measures which demonstrate significant effects on a range of health outcomes. An online compendium of these scales describes how to use them, and where they have been used (<http://www.c-changeprogram.org/content/gender-scales-compendium/index.html>). Simpler measures capture aspects of behavior or attitudes, and are now part of survey mechanisms such as the DHS. These are based

on combining a few items to measure constructs such as household decision making and access to economic resources. Most gender equality measures include an element of women's self-efficacy, reflecting women's ability to make choices. (Malhotra, Schuler and Boender, 2002).

Jejeebhoy (2000) states that women's autonomy involves gaining control over one's own life. Autonomy has similarly been defined by others, as the ability to make decisions through control over resources or information and act upon those decisions (i.e., Basu and Basu, 1991; Dyson and Moore, 1983). Autonomy within the household is often studied because it is this level of decision making which appears to most influence behavior and outcomes (Bloom, Wypij and Das Gupta, 2001; Basu and Basu, 1991; Jejeebhoy, 1991). Measures of household autonomy (including both household and financial decision making), control and choice are also intended to capture the process of empowerment or agency (Hashemi and Schuler, 1993; Malhotra and Mather, 1997; Mason, 1998). In addition the household plays a central role in gender relations (Acharya and Bennett, 1981; Malhotra et al., 2002) and norms. This report thus focuses on areas of gender equality known to affect health outcomes for women and children which are available in the DHS data. Specifically, women's autonomy within the context of household and financial decision making and social norms regarding attitudes towards wife beating and refusing sex are examined in the analyses exploring the determinants of the four maternal and child health outcomes.

1.3 GENDER MEASURES AND LOW BMI (MATERNAL HEALTH OUTCOME)

Low Body Mass Index (BMI) is defined as less than 18.5 and can be a sign of chronic energy deficiency (CED), and lack of adequate weight gain during pregnancy can lead to low birth weight babies, who have greater risk of mortality than normal weight babies. Low birth weight is one of the strongest predictors of neonatal, infant and under-five deaths. Low BMI can also have a detrimental impact on women themselves. A study of women in Kenya and Pakistan indicated that women with CED had increased morbidity (Garcia and Kennedy, 1994) while other studies have linked low BMI to decreased work capacity (Ferro-Luzzi, 1985; Shetty and James, 1984). It has also been found that among individuals who are HIV positive, individuals with lower BMI may progress to AIDS more quickly (Sharpstone, Murray, Ross, Phelan, Crane, Lepri and Gazzard, 1999).

Analysis from the National Family Health Survey-3 in India indicates that women who do not have a say in the purchase of large household items and experience physical or sexual violence are more likely to have a low BMI (IIPS and Macro International, 2007). In contrast women who alone decide how to use their earnings were less likely to have a low BMI than other employed women. Hindin (2000) found that women in Zimbabwe who did not have a say in household decisions were more likely to have a low BMI, than women who did have some say. Three decisions were studied—the purchase of large household items, whether the respondent worked and the number of children to have. In addition the relationship was strongest for women who had no cash income of their own. In a separate study of women in three resource constrained settings of Malawi, Zambia and Zimbabwe,

Hindin (2006) found different results for each country. In Malawi women with less say on decisions were more likely to have low BMI than women with some say. However women who had the entire final say on decisions were also more likely to have low BMI. In Zambia these same findings held for women in urban areas only, while the findings were not significant in Zimbabwe.

1.4 GENDER MEASURES AND FACILITY DELIVERY (UTILIZATION OF MATERNAL HEALTH SERVICES)

As the majority of pregnancy complications cannot be predicted or prevented, access to skilled delivery at a facility is essential in efforts to reduce maternal mortality (WHO, 2004). Several studies have explored the influence of gender measures on the likelihood of facility delivery. A study of women in Nepal found that women who discussed family planning with their husbands were more likely to receive antenatal care and skilled facility delivery care. In this study few women reported participating in household decision making or reported having control over their own earnings (Furuta and Salway, 2006). Beegle, Frankenburg and Thomas (2001) found that a woman's control over economic resources influences both antenatal care and delivery care. The study found that as the wife's share of household assets increased up to 25%, so did the probability that she obtained antenatal care and gave birth in a hospital or a private doctor's office. Mistry, Galal and Lu (2009) found that gender measures (decision making, permission to go out and financial autonomy) were associated with a greater use of antenatal, delivery and postnatal care for women in India. The effect was greatest in south India where generally women have greater autonomy than those in the north. A study of women in the slums of Nairobi, Kenya found that among middle class to poor households, decision making, freedom of movement and overall autonomy (encompassing both decision making and freedom of movement) were marginally associated with facility delivery (Fotso, Ezeh and Essendi, 2009). Another study found that for women in Ethiopia and Eritrea gender measures (household decision making, freedom of movement and attitude towards wife beating) were not significantly associated with facility delivery after controlling for socioeconomic factors (Woldenmichael, 2007).

1.5 GENDER MEASURES AND IMMUNIZATION SERVICES AND TREATMENT FOR ARIs (UTILIZATION OF CHILD HEALTH SERVICES)

This report explores the association of gender measures on the utilization of child health services to understand whether more empowered women are likely to better access and advocate for services for their children. Previous studies have indicated such a link. Visaria (1993) found that approximately 50% of women in her study in Gujarat, India did not feel free to take a sick child to a health care facility without prior approval from their husband or in-laws. Other studies have found that where women have more decision-making influence, more resources go to children (i.e., Blumberg, 1991; Thomas, 1990). This study looks at two measures of child health service utilization—fully immunized child and treatment for acute respiratory infections (ARIs). The first is an indicator of a routine prevention service while the later indicates taking a seriously ill child to a health provider for curative treatment.

Recently research has examined the relationship between gender measures and the utilization of immunization services (Desai and Johnson, 2005; Woldemicael, 2007; IIPS and Macro International, 2007), but areas of child health service utilization such as treatment for ARIs are yet to be explored. Woldemicael (2007) found that for women in Ethiopia, three gender measures were significantly associated with a child being fully immunized after controlling for socioeconomic factors. These measures were decision making for both large and small purchases and freedom of movement. Only freedom of movement was significantly associated with a child being fully immunized for the children of women in the Eritrean sample. Data from India has indicated that girls whose mothers decide alone the use of their husband's earnings are more likely to be fully immunized than other girls (IIPS and Macro International, 2007). A study of the determinants of the uptake of DTP3 in Northern Nigeria, found that women's decision-making power was one of the significant factors (Babalola, 2009).

This report aims to contribute to the few studies that have been conducted studying the association of gender measures (autonomy and social norms) with each of the four outcomes of interest.

Chapter 2 Data and Descriptive Analysis

All data for this report comes from recent Demographic and Health Surveys (DHS). The DHS collect information regarding health, nutrition and socioeconomic indicators. Data for currently married women with a birth in the past five years were used for this report. Descriptive tables for all the variables used in this report are presented by country in Appendix A.

2.1 AVAILABLE GENDER MEASURES—AUTONOMY AND SOCIAL NORMS

The DHS include questions on household decision making, financial decision making and attitudes regarding inequalities in gender roles. Four specific questions on household decision making were used to create an index. The questions were chosen because they are questions commonly used to study decision making (Kishor and Subaiya, 2008). All four questions were asked in 7 of the 8 countries. In Liberia the question on decision regarding health care was not included in the survey. So the index for Liberia was created from the remaining three questions. The exact questions are the following:

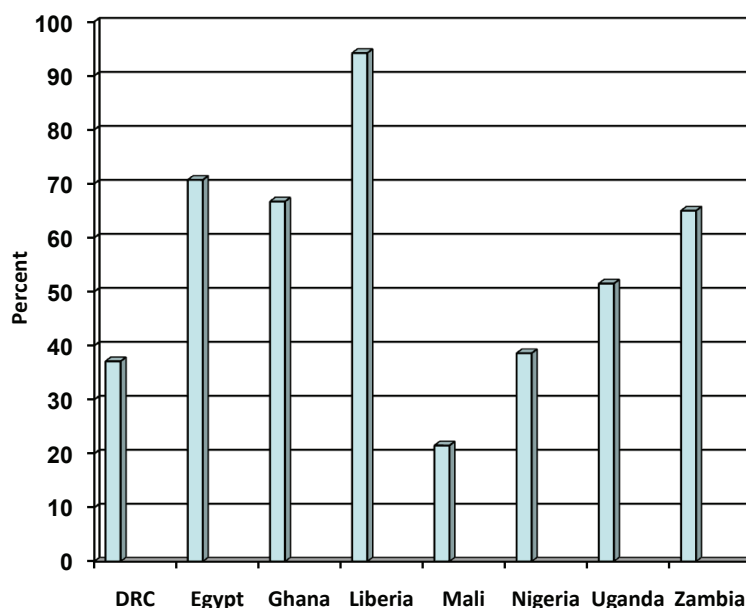
Who in your family usually has the final say on the following decisions?

1. Who usually makes decisions about health care for yourself: You, your husband/partner, you and your husband/partner jointly, or someone else?
2. Who usually makes decisions about making major household purchases: You, your husband/partner, you and your husband/partner jointly, or someone else?
3. Who usually makes decisions about making purchases for daily household needs: You, your husband/partner, you and your husband/partner jointly, or someone else?
4. Who usually makes decisions about making visits to your family or relatives: You, your husband/partner, you and your husband/partner jointly, or someone else?

Women who made all decisions either alone or jointly were categorized as having high decision-making authority. Those who were not involved in all four decisions were categorized as having low decision-making authority.

Figure 2 (on the following page) indicates the variation in decision-making authority by country. The highest percentage of women with high decision-making authority is in Liberia (94%), while the lowest percentage is in Mali (22%).

Figure 2 High Household Decision Making by Country



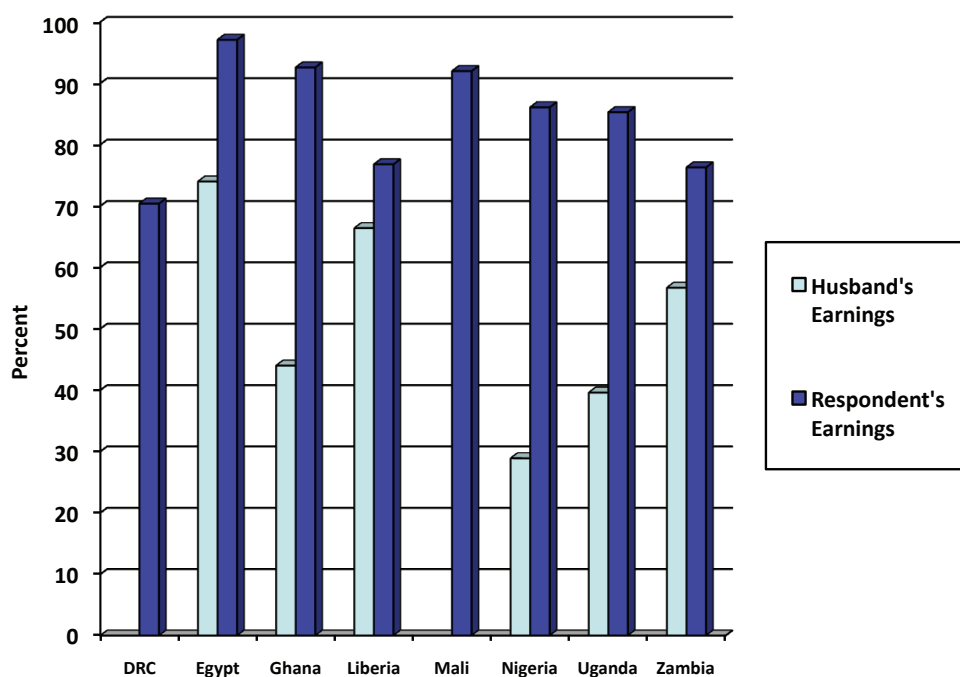
Two questions on financial decision making were included in the analyses. These questions were the following:

1. Who usually decides how your husband's/partner's earnings will be used: You, your husband/partner, or you and your husband/partner jointly?
2. Who usually decides how the money you earn will be used: Mainly you, mainly your husband/partner, or you and your husband/partner jointly?

For both questions women who made these decisions either alone or jointly were categorized together (as having high decision-making authority) while husband and other were categorized together (as having low decision-making authority). These two aspects of financial decision making were studied separately as not all women work for cash and there could be a difference between deciding the use of one's own earnings versus a husband's earnings.

For all countries more women participated in decision making for their own earnings compared to their husband's earnings. Participation in decisions regarding husband's earnings was highest in Egypt at 74% and lowest in Nigeria at 29%. Questions regarding husband's earnings were not asked in the DRC and Mali. Participation in decisions regarding the use of one's own earnings ranged from 97% in Egypt to 70% in the DRC. Figure 3 presents data for both indicators of financial decision making by country.

Figure 3 High Financial Decision Making by Country



Two indicators for capturing social norms were used in this analysis. The questions for attitudes regarding inequalities in gender roles were the following:

1. Sometimes a husband is annoyed or angered by things that his wife does. In your opinion is a husband justified in hitting or beating his wife in the following situations:
 - a. If she goes out without telling him?
 - b. If she neglects the children?
 - c. If she argues with him?
 - d. If she refuses to have sex with him?
 - e. If she burns the food?

Respondents who indicated that a husband is not justified in beating his wife for any of the following reasons were categorized together as believing wife beating is not acceptable. Those who indicated that wife beating is justified for at least one of the items on the list were classified as indicating that wife beating is acceptable.

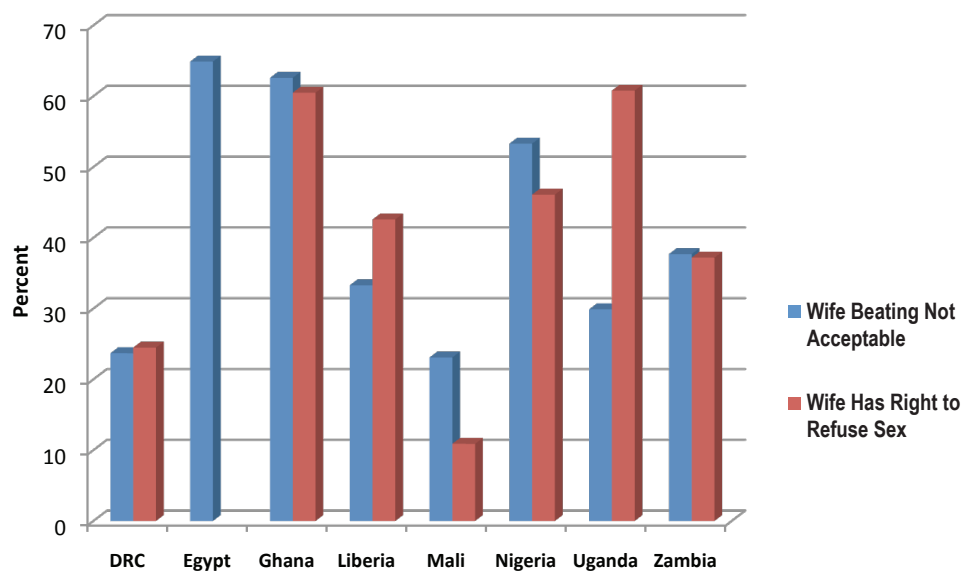
The second question regarding social norms and gender inequality was the following:

2. Husbands and wives do not always agree on everything. Please tell me if you think that a wife is justified in refusing to have sex with her husband when:
 - a. She knows her husband has a sexually transmitted disease?
 - b. She knows her husband has sex with other women?
 - c. She is tired or not in the mood?

Respondents who indicated that a wife could refuse sex for all of the three reasons were classified together, while those indicating that a wife could not refuse sex for at least one of three reasons were classified together.

Data for both indicators of social norms is presented in Figure 4. Both indicators varied widely among the countries. Sixty-five percent of women in Egypt indicated that wife beating is not acceptable but only 23–24% in Mali and the DRC believed it was acceptable. Sixty-one percent of women in Ghana and Uganda felt a wife has the right to refuse sex, while in Mali only 11% of women indicated so.

Figure 4 Social Norms



2.2 OUTCOME MEASURES

As mentioned in Chapter 1, four outcome measures were studied for this report.

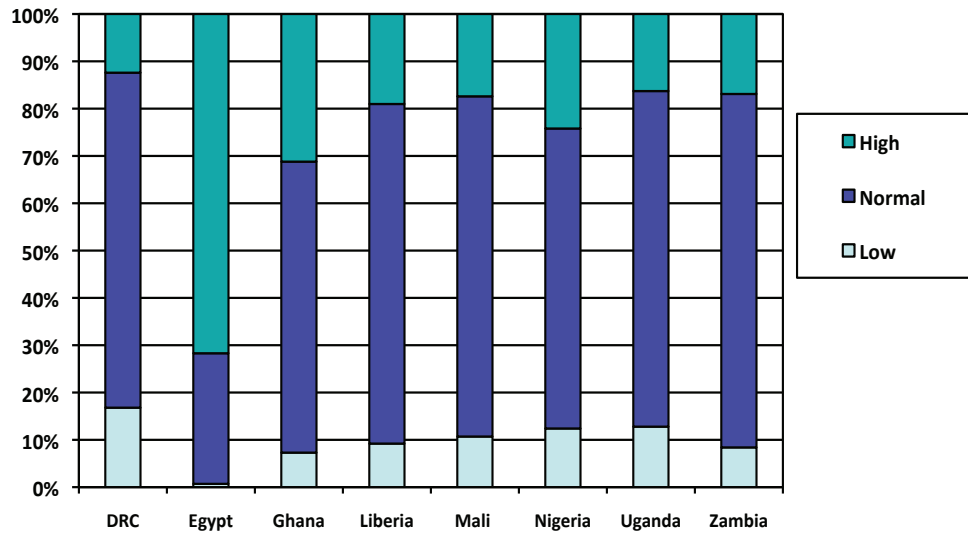
2.2.1 Body Mass Index

In this report women with low BMI are compared to women with normal BMI. Only women who were not currently pregnant and who did not have a child in the past three months were included for the BMI analysis. Women with high BMI were excluded from the bivariate and multivariate analyses because having high BMI has negative consequences. Following international standards low BMI is classified as below 18.5 while normal BMI is classified as 18.5 to 24.9. BMI is calculated by the formula:

$$\text{BMI} = \text{weight (in kg)} / \text{height}^2 \text{ (in meters)}$$

The BMI categories by country are presented in Figure 5. Low BMI ranges from less than 1% in Egypt to 12% in Nigeria.

Figure 5 BMI

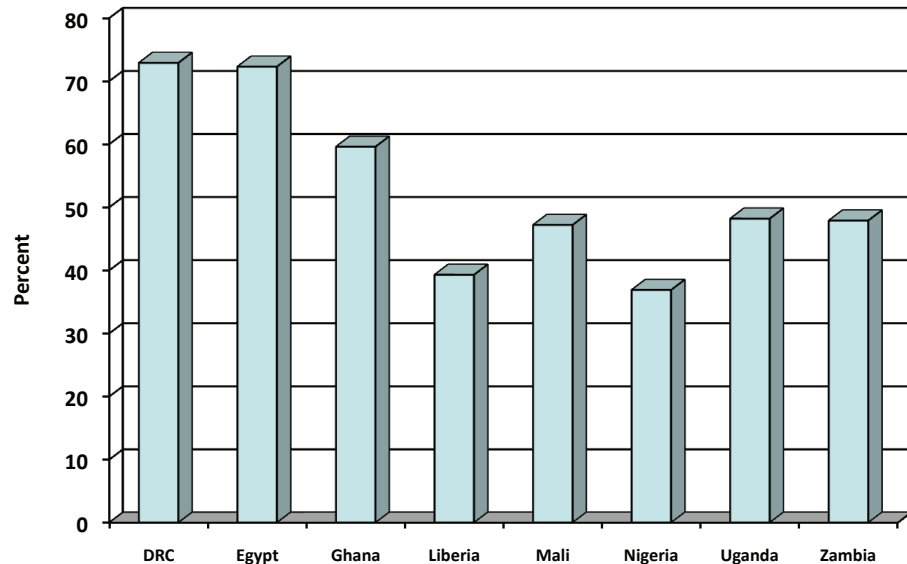


2.2.2 Facility Delivery

Women who had a birth in the last three/five years were asked: Where did you give birth to (Name)?

The response categories of hospital, clinic and health center were considered facility deliveries. Other sites such as the home were considered non-facility deliveries. If a woman had more than one birth in the past five years, the delivery site for the youngest child was used. Data on percent of women delivering in a health facility is presented in Figure 6. The highest percentage of women delivering in facilities is 73% in Egypt and the lowest is 37% in Nigeria.

Figure 6 Facility Delivery



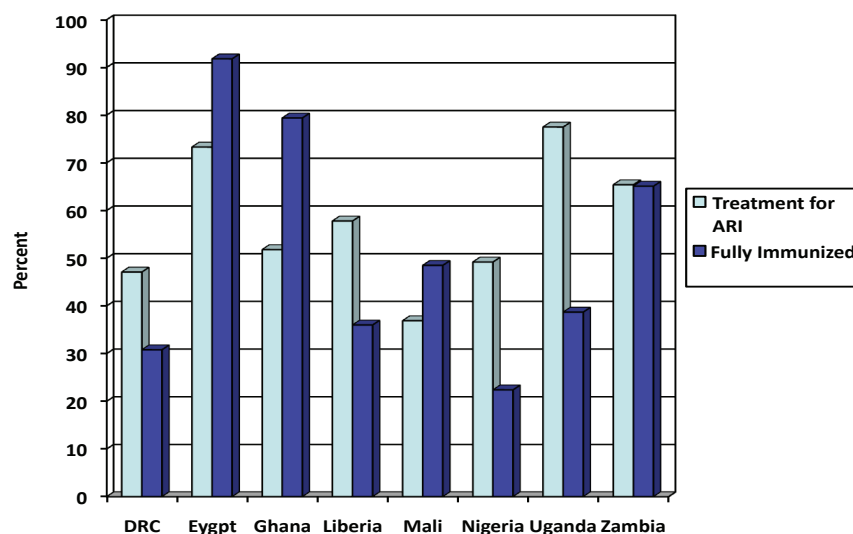
2.2.3 Fully Immunized Child

A fully immunized child was defined as a child between 12 and 23 months who received three doses of oral polio vaccine (OPV), three doses of diphtheria, pertussis and tetanus (DPT), one dose each of Bacille Calmette-Guerin (BCG) and measles vaccine before 12 months of age. Children were classified as fully vaccinated if they had all these vaccines. See Figure 7 for a country comparison. In Egypt the majority (91%) of children 12–23 months are fully immunized while in Nigeria only 21% are fully immunized.

2.2.4 Treatment for ARIs

This analysis was restricted to children aged 0–23 months who had a cough and fast/breathing due to a chest problem in the past two weeks. Caregivers were asked if the child was taken to an appropriate healthcare provider. According to the WHO and UNICEF, appropriate providers for the treatment of ARIs are hospitals, health centers, dispensaries, village health workers, mobile/outreach clinics and private physicians. Figure 7 below presents treatment sought for ARI across countries. Treatment seeking is highest in Uganda (78%) and lowest in Mali (37%).

Figure 7 Child Health Service Utilization



2.3 SOCIOECONOMIC VARIABLES

Several socioeconomic variables were studied including age, parity, residence (urban/rural), education level, wealth quintile, and working status. Age and gender of the index child were also included for the study of utilization of child health services. The wealth quintile is calculated in the DHS data from questions on household ownership of assets, type of flooring material and water source, and other household characteristics related to wealth. Residence (urban/rural) will be used as a rough proxy for access to services.

Chapter 3 Bivariate Analysis

Bivariate logistic regression was used to study the association between each of the socioeconomic and gender variables alone with each of the outcome variables. Results for the full bivariate analyses are presented in Appendix B. In addition summary tables for the bivariate analysis are presented in Appendix C and also at the end of this chapter.

3.1 BIVARIATE ANALYSIS FOR LOW BMI

Several socioeconomic variables were associated with low BMI. In Liberia and Nigeria young age (15–19) was significantly associated with having low BMI. The odds ratios were 2.38 (CL=1.20, 4.73, $p<0.05$) in Liberia and 1.42 (CL=1.14, 1.78, $p<0.01$) in Nigeria. In Uganda women 35+ were more likely to have low BMI than women in the reference category 25–34. In Ghana and Uganda women of parity 4 or more were significantly more likely to have low BMI than women of parity one, while in Liberia the opposite was true. In Liberia women of parity 2–3 were also significantly less likely to have low BMI, compared to women of parity one. In both Nigeria and Uganda women with some education were significantly less likely to have low BMI than women with no education. In Egypt women with a secondary or higher education were less likely to have low BMI compared to women with no education. In Nigeria women in rural areas had an odds ratio of 1.64 (CL=1.37, 1.96, $p<0.01$) of having low BMI compared to women in urban areas. In both Mali and Nigeria women who worked were significantly less likely to have low BMI than non-working women, while in Ghana the opposite was true. The wealth quintiles were significant in many countries with a general finding that the women in the higher wealth quintiles were less likely to have low BMI than women in the poorest wealth quintile.

Gender variables were also significantly associated with low BMI for many countries. Women with high decision-making authority were significantly less likely to have low BMI than women of low decision-making authority in the DRC, Egypt and Nigeria. Women who made decisions on husband's earnings alone or jointly were less likely to have low BMI than women who did not participate in such decisions in Ghana, Nigeria and Zambia. Financial decision making regarding the respondent's own earnings was not significant for any of the countries. The social norm indicators of attitudes towards wife beating and whether a wife has the right to refuse sex were only significant for Egypt and Nigeria. Among Egyptian women, those who believed that wife beating was never acceptable had an odds ratio of 0.46 (CL=0.25, 0.86, $p<0.05$) compared to women who believed wife beating was acceptable. For the Nigerian sample of women, those who believed that wife beating was never acceptable had an odds ratio of 0.75 (CL=0.66, 0.85, $p<0.01$) compared to women who believed wife beating was acceptable. Nigerian women who believed that a wife did not have the right to refuse sex had an odds ratio of 1.37 (CL=1.21, 1.56, $p<0.01$) compared to women who believed that a wife did have the right to refuse sex.

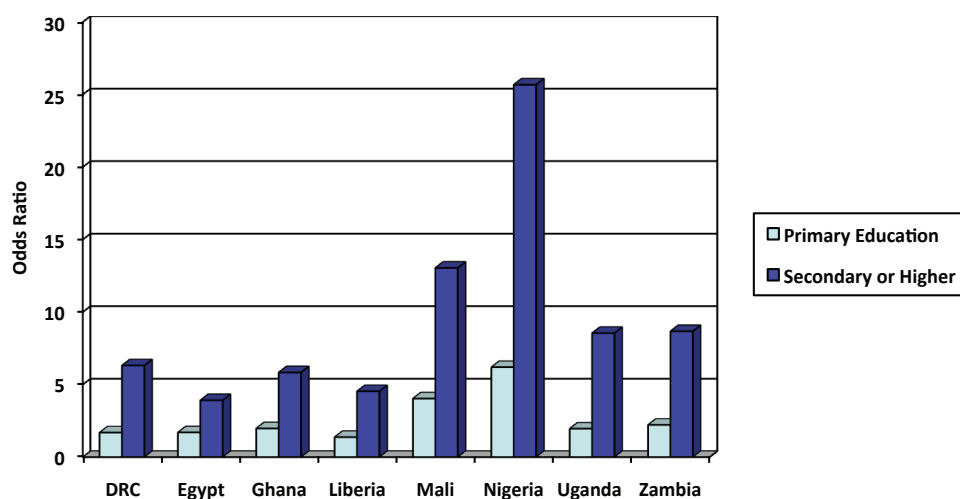
3.2 BIVARIATE ANALYSIS FOR FACILITY DELIVERY

Several of the socioeconomic variables (parity, education, residence and wealth) were significant for all countries. Age was significant in four countries and working status was significant in five countries.

Significant findings for age were somewhat mixed. In Ghana women 20–24 and 35+ were less likely to have a facility delivery than women 25–34. In Mali women 15–19 were more likely to have a facility delivery than women 25–34. In Nigeria women 15–19, 20–24, and 35+ were less likely to have a facility delivery than women 25–34. In Uganda young women 15–19 were more likely to have a facility delivery than women 25–34 while women 35+ were less likely to do so. In Zambia women 34+ were also significantly less likely to have a facility delivery than women in the reference category.

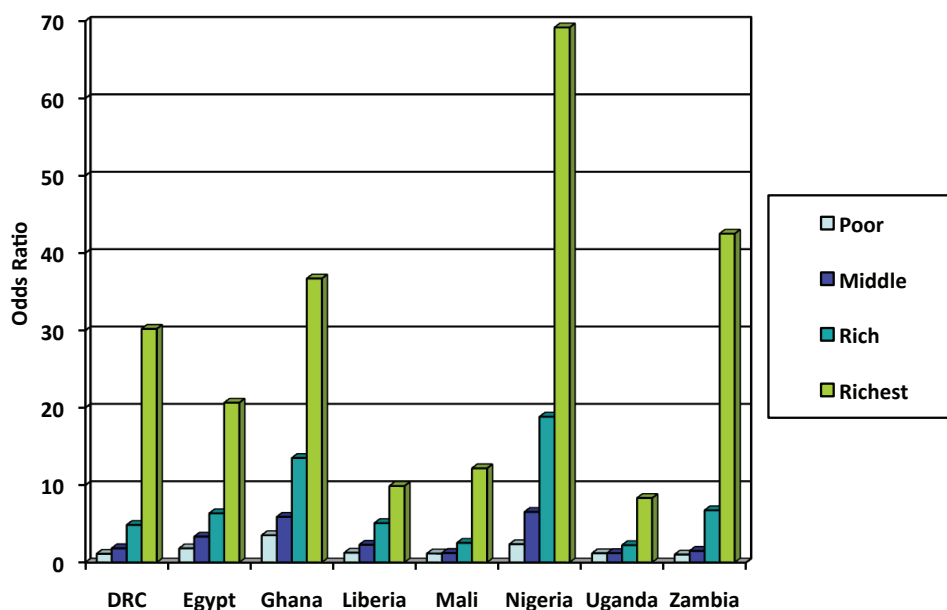
Parity, education, residence and the wealth index were significant factors for all countries. In every country women of parity 2–3 and 4+ were less likely to have a facility delivery than women of parity one. Education was also a significant factor in all countries. There was also evidence of a dose-response effect as the odds ratios for women with secondary or higher education compared to no education were much higher than the odds ratios for women with primary education compared to no education. See Figure 8.

Figure 8 Odds Ratios of Facility Delivery and Education (Reference: No Education)



In Nigeria the odds ratio was particularly high at 25.68 (CL=21.18, 31.13, $p < 0.01$) for women with secondary or higher education. There was also evidence of a dose response with the wealth index with the richest women have the highest odds of delivery in a facility. See Figure 9. In Nigeria women in the highest wealth quintile had an odds ratio of 69.15 (CL=51.46, 92.93, $p < 0.01$). In all countries rural women were significantly less likely to deliver in a health facility than urban women.

Figure 9 Odds Ratios of Facility Delivery and Wealth (Reference: Poorest Wealth Quintile)



Women who were working were significantly more likely to have a facility delivery in Egypt and Nigeria but less likely to have one in the DRC, Liberia, Uganda, and Zambia. The split finding is not unexpected because women work for a variety of reasons ranging from extreme poverty to a desire to work.

At least one gender variable was significant in each country. Findings for household decision-making authority were not consistent across the countries. Women with high decision-making authority were more likely to have a facility delivery in Egypt, Ghana, Nigeria and Zambia but less likely to do so in Uganda. Women who participated in decisions regarding husband’s earnings were significantly more likely to have a facility delivery than women who did not participate in this decision in four countries—Egypt, Ghana, Nigeria and Zambia. Women who participated in decisions regarding their own earnings were significantly more likely to have a facility delivery in all countries except Nigeria. Attitude towards wife beating was a significant variable for women in Egypt, Ghana, Nigeria, Uganda and Zambia. Women in these countries who believed wife beating was unacceptable were more likely to have a facility delivery. Women who felt that a wife did not have the right to refuse sex were significantly less likely to have a facility delivery than women who believed that women did have the right in three countries—Ghana, Nigeria and Uganda.

3.3 BIVARIATE ANALYSIS FOR FULLY IMMUNIZED CHILD

In Nigeria, young mothers (15–19 and 20–24) and mothers aged 35+ were significantly less likely to have their one year olds fully immunized than women 25–34. In Uganda and Zambia young mothers (15–19 and 20–24) were significantly less likely to have their one year olds fully immunized than women 25–34. In Nigeria women of parity 4 or more were significantly less likely to have a fully immunized one year old child than women of parity one. In Uganda and Zambia multiparous women were more likely to have a fully immunized child.

Education was a significant factor for several countries, and there also appeared to be a dose response for most of the countries. In Mali and Nigeria, women who had both a primary education and a secondary or higher education were more likely than women without an education to have a fully immunized child. In Nigeria the association was particularly strong for women with a secondary education or more with an OR of 12.57 (CL=9.80, 16.13, $p<0.01$). In the DRC, Ghana, and Liberia only the category of secondary education and higher was significant. In Egypt those with a primary education were less likely than those with no education to have a fully immunized child. Wealth had an association with a child 12–23 months being fully immunized in several of the countries. In Nigeria there was evidence of a dose-response with women in the higher four wealth quintiles more likely to have their one year old fully immunized than the poorest women. The odds for women in the two highest wealth quintiles were 9.9 (SE=1.8, $p<0.05$) and 22.0 (SE=3.9, $p<0.05$). In Ghana women in the two highest quintiles and in Liberia women in the three highest wealth quintiles were more likely to have a fully immunized child than women in the lowest quintile. There seemed to be a slight dose-response effect. In the DRC, Egypt, and Mali women in the richest wealth quintile were significantly more likely to have a fully immunized child than women in the poorest quintile. In Uganda women in the middle and second richest quintiles were less likely to have a fully immunized child.

Working status was only a significant variable for Nigerian women. Working Nigerian women were more likely to have their one year old fully immunized than non-working women (OR=1.84, CL=1.50, 2.25, $p<0.01$). Rural residence was inversely associated with a child being fully immunized in the DRC, Egypt, Liberia, Mali, Nigeria, and Zambia. Gender of the youngest child (being female) was negatively associated with having a fully immunized child in Mali.

All the gender variables were significant for women in Nigeria. Women who had high decision-making authority and who participated in decisions regarding their husband's and their own earnings were more likely to have a fully immunized child than their counterparts. Nigerian women who thought wife beating was unacceptable were more likely to have a fully immunized child, while those who thought that a woman did not have the right to refuse sex were less likely to have a fully immunized child. In Egypt, the only significant women's empowerment variable was household decision making, while in the DRC and Mali it was participating in decisions regarding one's own earnings. No women's empowerment variables had significant associations in Ghana. In Liberia individuals who thought that a woman did not have the right to refuse sex were less likely to have a fully immunized child. In Uganda women with higher decision-making authority and women who thought wife beating was unacceptable were more likely to have a fully immunized child. In Zambia women who participated in decisions regarding their husband's earnings were more likely to have a fully immunized child.

3.4 BIVARIATE ANALYSIS FOR TREATMENT FOR AN ARI

The sample size for treatment for an ARI was relatively small ranging from 113 in Ghana to 748 in Uganda. This variable was restricted to mothers who had a

child 0–23 months who had both difficulty breathing and a cough in the past two weeks. Only a few of the socioeconomic variables were significantly associated with treatment seeking for a sick child with an ARI. Age was significant for only two countries: in the DRC women aged 20–24 were less likely to take a sick child for treatment for ARI than women aged 25–34, while in Nigeria those aged 20–24 and 35+ were less likely to take a sick child for treatment. Parity was significant only in Liberia: women with parity 4+ were less likely to take a sick child in for treatment. Education was only significant for the Nigerian sample of women. Women with primary education and women with secondary education were more likely to take a sick child for treatment than women without an education. In Liberia and Mali, women residing in rural areas compared to urban areas were less likely to take a sick child in for treatment. Working status was not significant for any country. The wealth variable was significant for women in Egypt, Ghana, Liberia, Mali and Nigeria. Gender of the child was not significant for any country.

Gender variables were only significant in the DRC, Mali, Nigeria and Uganda. Household decision making was significant in both Nigeria and Uganda. Women with high decision-making authority were more likely to seek treatment for a child with an ARI. Participating in decision making regarding husband's earnings was significant in Nigeria while participating in decisions regarding one's own earnings was significant in the DRC, Mali, and Nigeria. The variable regarding attitudes towards wife beating was significant only in Nigeria. Women who believed wife beating was unacceptable were more likely to take a sick child for treatment.

Chapter 4 Multivariate Analysis

Multivariate logistic regression was used to study the effect of gender on the outcomes of interest after controlling for the socioeconomic variables. For each country and each outcome there are two Models. Model 1 contains the socioeconomic variables while Model 2 contains the socioeconomic variables and the women's empowerment variables. All the results for the multivariate analyses are presented in Appendix C. All socioeconomic variables from the bivariate analyses are retained in the multivariate analyses. For Model 2 all gender measures are included with the exception of financial decision making for respondent's own earnings. This variable applies only to women who earn cash for work and thus would drastically reduce sample sizes for the multivariate analysis.

The value of Model 1 compared to the bivariate analyses is that it allows us to look at all of the socioeconomic variables together as predictors of the outcome variables, or to examine each variable in the model in the presence of (or controlling for) all the other variables in the model. Therefore, all other socioeconomic variables being equal, we can isolate the effects of individual predictors. This analysis can give us information about the relative importance of each predictor. By adding gender measures into Model 2 and comparing to Model 1, we can say that holding all important socioeconomic predictors constant (or controlling for these socioeconomic predictors) whether the gender measures predict the outcome variable. The sample for Nigeria is also stratified by religion and these results are presented in Appendix D.

4.1 FINDINGS FOR THE MULTIVARIATE ANALYSIS FOR LOW BMI²

Socioeconomic variables were significant in Model 1 for most of the countries examined. In the DRC, Egypt, Uganda, and especially Nigeria wealth tended to be protective against low BMI, that is, those with greater wealth tended to have normal, compared to low, BMI. In Liberia the only significant socioeconomic predictor of low BMI was parity greater than one, which also negatively predicted low BMI. In Mali those who were working were less likely to have low BMI. In Nigeria women who were older (35+) and those with higher education were less likely to have low BMI. In Uganda older women (35+) were more likely to have low BMI compared to those aged 25–34.

In Model 2, controlling for the above socioeconomic variables, in the DRC and Nigeria women with high decision-making authority were less likely to have low BMI. In Ghana, Uganda, and Zambia women who made decisions on the husband's earnings alone or jointly were less likely to have low BMI, while in Egypt the opposite was true (but this result should be viewed with caution due to the small sample size for low BMI in Egypt).

² Multivariate analysis of low BMI for the Egyptian sample of women should be interpreted with caution because only 45 women (3% of the analytic sample of normal and low BMI women married or cohabitating) had low BMI.

4.2 FINDINGS FOR MULTIVARIATE ANALYSIS FOR FACILITY DELIVERY

Categories of all the socioeconomic variables were significant for Model 1 for all countries examined. In Egypt, Nigeria, and Uganda younger age (less than 25) made it less likely that delivery would occur in a health facility, controlling for the other socioeconomic predictors in the model. In all countries except Liberia parity greater than one made it less likely that women would have a facility delivery. Similarly, rural residence was a significant negative predictor of facility delivery in all countries examined. Both higher education and greater wealth were strong, positive predictors of a facility delivery in all the countries examined, with a strong dose-response relationship for wealth and facility delivery in all countries except Liberia and Uganda, where this dose-dependent effect was less pronounced (but still present). Interestingly, in these same two countries employment was a negative predictor of facility delivery, which is likely related to the attenuation of the wealth effect. The opposite effect was found for the other countries where employment was positively associated with facility delivery.

In Model 2 gender variables were significantly associated with facility delivery in three countries. In Ghana women who believed that wife beating was not justified were more likely to have a facility delivery than those who felt that wife beating was justified (OR=1.44, 95% CI=1.11, 1.87, $p<0.01$). This finding was true for women in Nigeria as well, where three of the four variables of gender were significant—household decision making, attitudes towards wife beating and attitudes about a wife refusing sex. Nigerian women with high household decision-making authority were more likely to have a facility delivery than those with low decision-making authority (OR=1.66, 95% CI=1.44, 1.90, $p<0.01$). Women who felt that a wife was not justified in refusing sex had a lower odds of facility delivery than women who felt it was justified (OR=0.77, 95% CI=0.69, 0.86, $p<0.01$). The same was true for women in Uganda (OR=0.83, 95% CI=0.70, 0.98, $p<0.05$).

4.3 FINDINGS FOR MULTIVARIATE ANALYSIS FOR FULLY IMMUNIZED CHILD

In Model 1 several of the socioeconomic variables were significantly associated with a child being fully immunized. In Nigeria and Uganda age less than 25 years negatively predicted full immunization, while in Zambia age 35+ (compared to the reference age range 25–34) negatively predicted full immunization. In Nigeria parity 4+ negatively predicted full immunization, while in both Uganda and Zambia higher parity positively predicted full immunization. Education was significant for Egypt, Nigeria, Mali and Uganda. Wealth was significant for the DRC, Nigeria, Liberia and Ghana. Overall more educated women and wealthier women were more likely to have a child who was fully immunized. The effect of education and wealth again showed a dose-dependent effect, with higher levels of education and wealth associated with greater likelihood of full immunization. Gender of the child was only significant in Mali with girls less likely to be fully immunized than boys.

The only gender variables significantly associated with a child being fully immunized were the high decision-making authority variable and the belief that wife beating is unacceptable in Nigeria, and the belief that a wife does not have the right to refuse

sex in both Liberia and Nigeria. In Nigeria, women with high decision-making authority and who believed a wife beating was unacceptable had a greater likelihood of having their child fully immunized. In both Nigeria and Liberia, women who believed a wife does not have the right to refuse sex were less likely to have their child fully immunized.

4.4 FINDINGS FOR MULTIVARIATE ANALYSIS FOR TREATMENT FOR AN ARI

Sample sizes for ARI were small, meaning the analysis lacked power. In the countries examined, relatively few of the socioeconomic variables were significantly associated with treatment for an ARI in symptomatic children aged 0–23 months. In Nigeria age, education, residence and wealth were all significant predictors, but again, this country had the largest sample size. In the DRC age was a significant predictor. In both Nigeria and the DRC younger age was associated with less likelihood of treatment for ARI. In Nigeria higher education was associated with greater likelihood of treatment for ARI in a dose-dependent manner. Rural residence was also associated with greater likelihood of treatment. In Ghana, Liberia, Mali, and Nigeria greater wealth was associated with a greater likelihood of treatment for ARI and the relationship was dose-dependent (higher levels of wealth were associated with a greater likelihood of treatment). In Uganda, on the other hand, poor (compared to the poorest) women were less likely to seek treatment for ARI for their children.

In Model 2 only two gender variables were associated with treatment for ARI. In the DRC high decision-making authority was associated with a greater likelihood of seeking treatment for ARI, while in Zambia women who believe a wife does not have a right to refuse sex were less likely to seek treatment for an ARI.

4.5 SUB-ANALYSIS FOR THE NIGERIAN SAMPLE OF WOMEN

4.5.1 Nigerian Sample Stratified by Religion

Because Nigeria is a large country with a large percentage of both Muslims and Christians, the data were stratified by religion to understand how the influence of women's empowerment might differ by cultural context within a country. The decision was made to stratify by religion rather than zone because while two zones are predominantly Christian (South East and South West) and one is predominantly Muslim (North West), the remaining three Zones (North Central, North East and South South) have a mixed population.

The directional relationships for the outcome low BMI did not differ by religion in the Model 1 multivariate analysis, which looked only at socioeconomic variables. Wealthier Muslim women were less likely to have low BMI than the poorest Muslim women, and the relationship was dose-dependent. This trend was also observed for Christian women but the relationship was significant only when comparing the richest to the poorest women. Older (age 35+) Muslim but not Christian women were significantly more likely to have low BMI compared to those aged 25–34. Looking at the results for Model 2 incorporating the gender variables, Muslim, but

not Christian, women with high decision-making authority were less likely to have low BMI than their counterparts. Interestingly Muslim women who participated in decisions regarding husband's earnings were more likely to have low BMI than women who did not participate in such decisions (OR=1.31, 95% CI=1.00, 1.71, $p<0.05$). For the Christian sample, women who believed that a wife does not have a right to refuse sex were more likely to have low BMI than their counterparts who believed that a wife does have the right to refuse sex (OR=1.37, 95% CI=1.05, 1.78, $p<0.05$).

Findings from Model 1 were similar for Christian and Muslim women for facility delivery. Older more educated, wealthier, and working women were more likely to have a facility delivery than their counterparts. Women of higher parity were less likely to have a facility delivery than women of lower parity. The significance of residence, however, differed by religion. Only rural Christian women were less likely to have a facility delivery than urban Christian women. There were some differences seen by religion in Model 2. The household decision making variable was significant for the Muslim sample of women. Both social norm variables were significant for the Christian sample of women, and one social norm variable was significant for the Muslim sample of women. Muslim women with high household decision-making authority were more likely to have a facility delivery (OR=2.54, 95% CI=2.02, 3.19, $p<0.01$). For the Christian sample, women who believed that wife beating is never acceptable had a higher odds of a facility delivery than their counterparts (OR=1.20, 95% CI=1.03, 1.39, $p<0.05$). For both Christian and Muslim women, those who believed that a wife does not have the right to refuse sex had a lower likelihood of having a facility delivery.

Significant findings were similar for the Christian and Muslim samples of women for the multivariate analysis of fully immunized child for Model 1. In general more educated and wealthier women were more likely to have a fully immunized child. For both Muslim and Christian women, the youngest women (aged 15–19) were less likely to have a fully immunized child, compared to women aged 25–34. Christian but not Muslim women who worked were more likely to have a fully immunized child. In Model 2 the only gender variable that was significant for the Christian sample of women was household decision making. Women who had high decision-making authority had a higher odds of having a fully immunized child aged 12–23 months (OR=1.39, CI=1.08, 1.78, $p<0.05$). For the Muslim sample of women three of the four women's empowerment variables were significant. Women who had high decision-making authority also had a higher odds of having a fully immunized child aged 12–23 months than women with low decision-making authority (OR=1.78, CI=1.13, 2.80, $p<0.05$). Women who believed that wife beating is never acceptable had a higher odds of a facility delivery (OR=1.61, OR=1.18, 2.18, $p<0.01$). Women who believed that a wife is not justified in refusing sex had a lower odds of having a fully immunized child (OR= 0.65, OR=0.46, 0.93, $p<0.05$).

For the multivariate analyses for treatment of ARIs, there were two differences (in magnitude but not direction) by religion in Model 1. In Model 1 the Christian sample of young women aged 15–19 and older women aged 34+ were significantly less likely to take a child for treatment for an ARI than women aged 25–34. Age

was not significant for the Muslim sample of women. Interestingly rural women had a greater likelihood of taking a child for treatment than urban women for both samples, although this association was significant only in the Muslim sample. At least one of the last two categories of the wealth variable (rich and richest) was significant for both samples of women. Wealthier women were more likely to take a child for treatment. Only one of the gender variables was significantly associated with treatment for an ARI, and only among Muslim women. Interestingly, Muslim women who believed that a wife is not justified in refusing sex had a higher likelihood of having a fully immunized child (OR= 1.72, OR=1.04, 2.86, $p<0.05$).

Chapter 5 Conclusion and Policy Implications

Findings from this report indicate that the measures of gender that were studied—household decision making, financial decision making, and the social norm variables—are important distal factors to consider in policies and programs intended to improve maternal health, reduce maternal mortality, and reduce under-five mortality. Findings also confirm the importance of social context (Mason and Smith 2003) when studying gender, as the significance of variables differed by country. These measures were particularly important for Nigerian women, but not so for women from Mali. However, the preceding statement should be qualified by noting that the Nigerian sample was much larger than that of the next most populous sample ($n=16,676$ compared to the next highest sample size of $n=8,816$), which must have contributed power to the analysis and made it easier to generate a greater number of significant findings (which could be considered a limitation of the analysis). However, another way to state it is that the distal nature of the relationships between the gender variables and the outcomes of interest may require greater analytic power to detect significance. Given that there were significant findings in countries other than Nigeria with much smaller sample sizes suggests that there is a country-level contextual aspect to the findings even if they are somewhat sample-size dependent.

Multivariate analysis indicated that after controlling for socioeconomic variables, having high financial or household decision-making authority was a protective factor against low BMI in the DRC, Ghana, Nigeria, Uganda and Zambia. Analysis for facility delivery indicated household decision making and attitudes towards gender roles were significantly associated with facility delivery in Nigeria. Attitudes towards gender roles were significant for both Ghana and Uganda. The only gender measures significantly associated with a child being fully immunized were the household decision making and wife beating is never acceptable variables in Nigeria. Women's empowerment variables were not significantly associated with treatment for an ARI except in the DRC (high decision-making authority was protective) and Zambia (belief that wife does not have a right to refuse sex was associated with lower likelihood of treatment). The sample sizes for treatment for an ARI were relatively small as described earlier in the report. This is a limitation of the analysis.

The relationships revealed depend on the nature of the outcome variable chosen and its association with both the socioeconomic and the gender variables. In particular, the strongest associations detected were between the outcome variables involving access to health facilities (facility delivery, full immunization, and treatment for acute ARI) and the predictor variables education and wealth, both factors associated with much higher likelihood of access. These findings demonstrate the particular importance of the education and wealth variables for the outcomes of interest in this report. In addition to being important in and of themselves, education and wealth can be seen as inputs into the empowerment process (Kishor, 2000).

Variables for gender were significant in some countries even after controlling for education and wealth, indicating that programs and policy must facilitate the incorporation of gender into programming in addition to focusing on educating girls and reducing poverty. Having household and financial authority was particularly important for women's general health as measured by low BMI. Gender measures were significantly associated with low BMI in 5 of the 8 countries studied. Since low BMI is often a sign of CED, women who are consistently able to make decisions and have a financial say may be in a better position to take care of themselves. It could be that gender measures have more influence on overall health than on access to services at certain points in time. Also, this report lacked a variable for accessibility or distance to the nearest facility, which is often a key factor in the ability to seek services. It could be that more empowered women are more able to access services, but if the services are not accessible to begin with then gender would not be a factor.

In terms of future research needs, gender measures have been largely studied in Asia. It is possible that different measures of gender might be better suited for African women. Qualitative studies would help determine how such measures could be best captured in Africa. The stratified analysis for the Nigerian sample of women also indicates that the influence of gender measures may vary by religion or culture even within countries. This report presented a regional look at Africa but also important would be country specific studies.

Recommendations from this report would be for programs and policies to continue focusing on education and poverty reduction, and increasing access to services. In addition programs focused on gender measures can have benefits that go even beyond programs focused only on education and poverty reduction. In the countries studied, gender measures were particularly important for a woman's own health. Countless studies have shown the influence of a woman's health on her pregnancy and birth outcomes and her children's health. Thus findings from this report provide clear evidence of the importance of promoting gender equity as a means to improve both maternal and child health. Gender equity should be seen as a means to help countries in Africa achieve their MDGs.

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Appendix A

Table A.1—Sociodemographic Variables for Women Currently Married or Living Together with a Birth in the Last Five Years*

	DRC		Egypt		Ghana		Liberia		Mali		Nigeria		Uganda		Zambia	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Age																
15–19	294	6.1	272	3.5	54	2.9	172	5.8	864	9.8	1,010	6.0	255	6.1	180	5.4
20–24	1,275	26.5	1,892	24.4	318	17.3	623	20.9	2,003	22.7	3,124	18.7	1,058	25.3	810	24.0
25–34	2,041	42.5	4,242	54.7	897	48.8	1,269	42.6	3,827	43.4	7,977	47.8	1,919	45.9	1,629	48.4
35+	1,193	24.8	1,347	17.4	568	30.9	917	30.8	2,122	24.1	4,566	27.4	946	22.6	747	22.2
Total	4,803	100.0	7,753	100.0	1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Parity																
1	828	17.2	2,038	26.3	329	17.9	430	14.4	1,380	15.6	2,618	15.7	542	13.0	437	13.0
2–3	1,547	32.2	3,871	49.9	727	38.9	1,002	33.6	2,602	29.5	5,391	32.3	1,162	27.8	1,153	34.2
4+	2,429	50.6	1,844	23.8	847	43.2	1,550	52.0	4,834	54.8	8,665	52.0	2,474	59.2	1,776	52.8
Total	4,803	100.0	7,753	100.0	1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Education																
None	1,118	23.3	1,958	25.3	600	32.7	1,530	51.4	7,458	84.6	7,843	47.0	951	22.8	456	13.6
Primary	2,019	42.0	786	10.1	445	24.2	996	33.4	909	10.3	3,719	22.3	2,629	62.9	2,118	62.9
Secondary+	1,666	34.7	5,009	64.6	791	43.1	451	15.2	449	5.1	5,114	30.7	599	14.3	792	23.5
Total	4,803	100.0	7,753	100.0	1,835	100.0	2,977	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Residence																
Urban	1,908	39.7	2,954	38.1	711	38.7	859	28.8	2,447	27.8	5,040	30.2	505	12.1	1,030	30.6
Rural	2,894	60.3	4,799	61.9	1,127	61.3	2,122	71.2	6,369	72.2	11,636	69.8	3,673	87.9	2,337	69.4
Total	4,803	100.0	7,753	100.0	1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Working**																
No	1,042	21.7	6,759	87.2	166	9.0	772	25.9	3,143	35.6	4,977	29.8	340	8.1	1,374	40.8
Yes	3,761	78.3	995	12.8	1,671	91.0	2,209	74.1	5,673	64.4	11,699	70.2	3,839	91.9	1,993	59.2
Total	4,803	100.0	7,753	100.0	1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Wealth Index																
Poorest	963	20.0	1,498	19.3	450	24.5	667	22.4	1,770	20.1	3,903	23.4	907	21.7	783	23.3
Poor	1,083	22.5	1,525	19.7	392	21.4	722	24.2	1,795	20.4	3,728	22.4	953	22.8	702	20.9
Middle	1,029	21.4	1,625	21.0	324	17.6	672	22.6	1,847	21.0	3,108	18.6	820	19.6	709	21.0
Rich	970	20.2	1,596	20.6	377	20.5	558	18.7	1,778	20.2	2,963	17.8	791	18.9	661	19.6
Richest	758	15.8	1,509	19.5	294	16.0	362	12.1	1,626	18.4	2,974	17.8	708	16.9	511	15.2
Total	4,803	100.0	7,753	100.0	1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0
Gender of Youngest Child (0–23 Months)																
Male	1,446	50.2	2,136	50.4	503	50.4	798	53.6	2,591	50.8	4,888	49.9	1,285	49.4	1,014	49.6
Female	1,433	49.8	2,106	49.6	495	49.6	690	46.4	2,506	49.2	4,907	50.1	1,319	50.6	1,032	50.4
Total	2,879	100.0	4,242	100.0	998	100.0	1,489	100.0	5,097	100.0	9,794	100.0	2,604	100.0	2,046	100.0
Gender of Youngest Child (12–23 Months)																
Male	676	50.4	1,011	50.7	227	48.3	379	55.1	1,265	51.4	2,200	48.8	643	49.0	500	49.6
Female	665	49.6	984	49.3	243	51.7	309	44.9	1,198	48.6	2,312	51.2	670	51.0	508	50.4
Total	1,341	100.0	1,996	100.0	470	100.0	688	100.0	2,463	100.0	4,512	100.0	1,313	100.0	1,008	100.0

* Adjusted for DHS sampling frame using the *svy* command in *Stata*

** Currently working or worked in the past year

Table A.2—Women's Empowerment Variables

	DRC		Egypt		Ghana		Liberia		Mali		Nigeria		Uganda		Zambia	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Household Decision-Making Authority*																
High	1,781	37.1	5,472	70.7	1,220	66.7	2,789	94.2	1,891	21.5	6,412	38.6	2,147	51.5	2,185	65.0
Low	3,016	62.9	2,265	29.3	610	33.3	173	5.8	6,907	78.5	10,187	61.4	2,024	48.5	1,176	35.0
Total	4,797	100.0	7,736	100.0	1,831	100.0	2,962	100.0	8,798	100.0	16,599	100.0	4,171	100.0	3,361	100.0
Financial Decision Making (Husband's Earnings)																
Alone/Jointly	NA		5,662	74.0	799	44.0	1,874	66.4	NA		4,722	28.9	1,607	39.6	1,828	56.7
Husband/Other	NA		1,988	26.0	1,018	56.0	946	33.6	NA		11,639	71.1	2,451	60.4	1,393	43.3
Total	NA		7,650	100.0	1,816	100.0	2,820	100.0	NA		16,361	100.0	4,058	100.0	3,221	100.0
Financial Decision Making (Wife's Earnings)																
Alone/Jointly	1,858	70.4	816	97.1	1,291	92.6	990	76.8	3,851	92.0	8,107	86.1	1,664	85.3	924	76.3
Husband/Other	780	29.6	24	2.9	103	7.4	300	23.2	333	8.0	1,305	13.9	288	14.7	287	23.7
Total	2,638	100.0	840	100.0	1,394	100.0	1,290	100.0	4,184	100.0	9,412	100.0	1,952	100.0	1,211	100.0
Attitudes Towards Wife Beating																
Never Acceptable	1,113	23.7	5,014	64.9	1,132	62.6	984	33.3	2,009	23.1	8,675	53.3	1,236	29.9	1,260	37.7
Acceptable	3,584	76.3	2,708	35.1	677	37.4	1,968	66.7	6,698	76.9	7,607	46.7	2,896	70.1	2,081	62.3
Total	4,697	100.0	7,722	100.0	1,809	100.0	2,952	100.0	8,707	100.0	16,282	100.0	4,132	100.0	3,341	100.0
Wife Has Right to Refuse Sex																
No	3,625	75.5	NA		726	39.5	1,711	57.4	7,686	89.1	8,993	53.9	1,638	39.2	2,114	62.8
Yes	1,178	24.5	NA		1,111	60.5	1,270	42.6	1,089	10.9	7,683	46.1	2,540	60.8	1,253	37.2
Total	4,803	100.0	NA		1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0

* For Liberia only three decisions were studied. There was no data concerning decisions on health.

Table A.3—Outcome Variables

	DRC		Egypt		Ghana		Liberia		Mali		Nigeria		Uganda		Zambia	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Household Decision-Making Authority*																
High	1,781	37.1	5,472	70.7	1,220	66.7	2,789	94.2	1,891	21.5	6,412	38.6	2,147	51.5	2,185	65.0
Low	3,016	62.9	2,265	29.3	610	33.3	173	5.8	6,907	78.5	10,187	61.4	2,024	48.5	1,176	35.0
Total	4,797	100.0	7,736	100	1,831	100.0	2,962	100.0	8,798	100.0	16,599	100.0	4,171	100.0	3,361	100.0
Financial Decision Making (Husband's Earnings)																
Alone/Jointly			5,662	74.0	799	44.0	1,874	66.4			4,722	28.9	1,607	39.6	1,828	56.7
Husband/Other	NA		1,988	26.0	1,018	56.0	946	33.6	NA		11,639	71.1	2,451	60.4	1,393	43.3
Total			7,650	100	1,816	100.0	2,820	100.0			16,361	100.0	4,058	100.0	3,221	100.0
Financial Decision Making (Wife's Earnings)																
Alone/Jointly	1,858	70.4	816	97.1	1,291	92.6	990	76.8	3,851	92.0	8,107	86.1	1,664	85.3	924	76.3
Husband/Other	780	29.6	24	2.9	103	7.4	300	23.2	333	8.0	1,305	13.9	288	14.7	287	23.7
Total	2,638	100.0	840	100.0	1,394	100.0	1,290	100.0	4,184	100.0	9,412	100.0	1,952	100.0	1,211	100.0
Attitudes Towards Wife Beating																
Never Acceptable	1,113	23.7	5,014	64.9	1,132	62.6	984	33.3	2,009	23.1	8,675	53.3	1,236	29.9	1,260	37.7
Acceptable	3,584	76.3	2,708	35.1	677	37.4	1,968	66.7	6,698	76.9	7,607	46.7	2,896	70.1	2,081	62.3
Total	4,697	100.0	7,722	100.0	1,809	100.0	2,952	100.0	8,707	100.0	16,282	100.0	4,132	100.0	3,341	100
Wife Has Right to Refuse Sex																
No	3,625	75.5			726	39.5	1,711	57.4	7,686	89.1	8,993	53.9	1,638	39.2	2,114	62.8
Yes	1,178	24.5	NA		1,111	60.5	1,270	42.6	1,089	10.9	7,683	46.1	2,540	60.8	1,253	37.2
Total	4,803	100.0			1,837	100.0	2,982	100.0	8,816	100.0	16,676	100.0	4,178	100.0	3,367	100.0

Appendix B

Table B.1— Bivariate Analysis — Low BMI (Compared to Normal BMI) and Descriptive Variables

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Age								
15–19	1.92 (0.87, 4.22)	1.61 (0.47, 5.45)	0.42 (0.09, 2.04)	2.38* (1.20, 4.73)	1.35 (0.98, 1.87)	1.42**(1.14, 1.78)	0.50 (0.12, 2.00)	1.37 (0.75, 2.48)
20–24	1.13 (0.73, 1.74)	1.27 (0.66, 2.42)	0.81 (0.42, 1.59)	1.60 (1.00, 2.56)	1.03 (0.78, 1.36)	1.13 (0.97, 1.31)	0.78 (0.43, 1.41)	0.93 (0.63, 1.37)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.93 (0.57, 1.50)	0.57 (0.19, 1.69)	1.52 (0.95, 2.41)	1.28 (0.81, 2.04)	1.05 (0.81, 1.37)	0.88 (0.77, 1.01)	2.20**(1.36, 3.54)	1.07 (0.73, 1.57)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.75 (0.44, 1.29)	0.63 (0.33, 1.21)	1.77 (0.83, 3.78)	0.40**(0.22, 0.70)	0.92 (0.68, 1.23)	0.93 (0.78, 1.11)	1.98 (0.81, 4.80)	0.84 (0.51, 1.40)
4+	0.81 (0.48, 1.36)	0.67 (0.30, 1.49)	2.24* (1.10, 4.57)	0.49**(0.30, 0.80)	0.85 (0.62, 1.17)	1.05 (0.89, 1.24)	2.31* (1.00, 5.33)	0.97 (0.62, 1.52)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	0.90 (0.57, 1.43)	0.66 (0.25, 1.73)	0.85 (0.49, 1.47)	1.18 (0.75, 1.86)	0.80 (0.57, 1.12)	0.55**(0.45, 0.62)	0.49**(0.31, 0.78)	0.99 (0.67, 1.45)
Secondary+	0.83 (0.52, 1.33)	0.36**(0.19, 0.70)	0.74 (0.45, 1.23)	0.75 (0.40, 1.38)	0.78 (0.43, 1.41)	0.36**(0.30, 0.43)	0.40* (0.19, 0.84)	0.70 (0.42, 1.19)
Residence								
Urban	Ref	Ref	NA	Ref	Ref	Ref	Ref	Ref
Rural	1.14 (0.73, 1.77)	1.27 (0.64, 2.53)	1.67 (0.97, 2.87)	1.40 (0.91, 2.15)	1.17 (0.93, 1.48)	1.64**(1.37, 1.96)	1.33 (0.54, 3.30)	1.29 (0.88, 1.88)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.24 (0.75, 2.07)	0.72 (0.28, 1.90)	2.73* (1.01, 7.39)	0.98 (0.64, 1.51)	0.75* (0.61, 0.94)	0.74**(0.65, 0.83)	0.87 (0.33, 2.33)	0.98 (0.72, 1.35)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	0.63 (0.37, 1.08)	0.32**(0.14, 0.72)	1.26 (0.74, 2.15)	0.74 (0.43, 1.26)	1.28 (0.98, 1.66)	0.74**(0.64, 0.85)	0.63 (0.36, 1.11)	1.19 (0.78, 1.83)
Middle	0.82 (0.49, 1.39)	0.32* (0.12, 0.87)	1.54 (0.88, 2.67)	0.57 (0.31, 1.03)	1.19 (0.91, 1.57)	0.50**(0.41, 0.60)	0.49* (0.28, 0.85)	1.31 (0.82, 2.10)
Rich	0.49* (0.28, 0.86)	0.26* (0.09, 0.77)	0.21** (0.07, 0.63)	0.55* (0.31, 0.97)	1.07 (0.77, 1.49)	0.42**(0.34, 0.51)	0.38**(0.20, 0.72)	0.89 (0.54, 1.46)
Richest	0.52* (0.28, 0.97)	0.27 (0.07, 1.06)	0.56 (0.19, 1.70)	0.80 (0.39, 1.61)	0.99 (0.63, 1.57)	0.26**(0.20, 0.34)	0.42* (0.20, 0.92)	0.96 (0.51, 1.78)

Table B.2—Bivariate Analysis—Low BMI (Compared to Normal BMI) and Gender Measures

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Household Decision-Making Authority								
High	0.60* (0.37, 0.97)	0.46* (0.25, 0.84)	0.95 (0.61, 1.50)	1.15 (0.54, 2.43)	1.02 (0.79, 1.33)	0.49** (0.42, 0.57)	1.19 (0.79, 1.80)	1.02 (0.75, 1.37)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Financial Decision Making (Decision on Husband's Earnings)								
Alone/Jointly	NA	1.14 (0.59, 2.20)	0.58* (0.36, 0.93)	0.86 (0.59, 1.25)	NA	0.70** (0.59, 0.82)	0.68 (0.44, 1.06)	0.62** (0.44, 0.88)
Husband Alone/Other	NA	Ref	Ref	Ref	NA	Ref	Ref	Ref
Financial Decision Making (Decision on Wife's Earnings)								
Alone/Jointly	1.10 (0.63, 1.91)	NA	1.00 (0.43, 2.31)	0.89 (0.51, 1.56)	1.03 (0.60, 1.76)	1.03 (0.82, 1.30)	0.69 (0.26, 1.79)	0.71 (0.39, 1.30)
Husband Alone/Other	Ref	NA	Ref	Ref	Ref	Ref	Ref	Ref
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	0.82 (0.51, 1.30)	0.46* (0.25, 0.86)	0.82 (0.54, 1.24)	0.80 (0.49, 1.32)	0.86 (0.68, 1.09)	0.75** (0.66, 0.85)	1.08 (0.70, 1.66)	1.03 (0.77, 1.39)
Wife Has Right to Refuse Sex								
Yes	Ref	NA	Ref	Ref	Ref	Ref	Ref	Ref
No	1.01 (0.68, 1.51)	NA	1.42 (0.90, 2.22)	0.86 (0.57, 1.32)	1.21 (0.88, 1.66)	1.37** (1.21, 1.56)	1.03 (0.68, 1.56)	1.22 (0.90, 1.66)

Table B.3—Bivariate Analysis—Facility Delivery and Descriptive Variables

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Age								
15–19	0.93 (0.57, 1.51)	1.19 (0.89, 1.56)	0.61 (0.35, 1.04)	1.35 (0.87, 2.08)	1.33** (1.09, 1.62)	0.37** (0.30, 0.44)	1.55** (1.12, 2.16)	1.28 (0.89, 1.86)
20–24	1.07 (0.84, 1.37)	1.01 (0.89, 1.15)	0.75* (0.57, 0.98)	1.07 (0.85, 1.36)	1.03 (0.89, 1.20)	0.61** (0.55, 0.68)	1.18 (0.99, 1.41)	1.00 (0.83, 1.21)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.89 (0.67, 1.19)	0.99 (0.85, 1.14)	0.81* (0.64, 1.02)	1.02 (0.81, 1.30)	0.84 (0.70, 1.00)	0.82** (0.75, 0.90)	0.64** (0.53, 0.76)	0.73** (0.59, 0.89)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.67** (0.51, 0.90)	0.54** (0.47, 0.63)	0.75 (0.56, 1.00)	0.71* (0.53, 0.97)	0.72** (0.61, 0.84)	0.83** (0.75, 0.92)	0.53** (0.42, 0.68)	0.60** (0.47, 0.78)
4+	0.62** (0.48, 0.80)	0.28** (0.24, 0.33)	0.41** (0.31, 0.55)	0.59** (0.45, 0.77)	0.56** (0.48, 0.66)	0.48** (0.43, 0.53)	0.31** (0.25, 0.39)	0.37** (0.28, 0.48)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.69** (1.29, 2.20)	1.70** (1.42, 2.03)	1.98** (1.44, 2.72)	1.38* (1.08, 1.77)	4.04** (3.23, 5.06)	6.20** (5.27, 7.29)	1.96** (1.63, 2.37)	2.22** (1.67, 2.95)
Secondary+	6.32** (4.21, 9.48)	3.92** (3.43, 4.49)	5.84** (4.31, 7.92)	4.54** (3.34, 6.18)	13.05** (8.65, 19.69)	25.68** (21.18, 31.13)	8.55** (6.34, 11.53)	8.68** (6.02, 12.51)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.17** (0.10, 0.30)	0.29** (0.24, 0.35)	0.15** (0.11, 0.22)	0.18** (0.13, 0.27)	0.13** (0.09, 0.21)	0.19** (0.15, 0.24)	0.14** (0.08, 0.25)	0.08** (0.06, 0.12)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.61* (0.42, 0.89)	1.82** (1.49, 2.22)	0.79 (0.51, 1.22)	0.47** (0.36, 0.62)	1.10 (0.90, 1.33)	2.01** (1.77, 2.28)	0.22** (0.16, 0.32)	0.76** (0.62, 0.93)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.13 (0.85, 1.48)	1.83** (1.55, 2.15)	3.53** (2.60, 4.80)	1.27 (0.85, 1.91)	1.16 (0.93, 1.45)	2.37** (1.85, 3.03)	1.20 (0.96, 1.51)	1.03 (0.80, 1.33)
Middle	1.84** (1.19, 2.83)	3.35** (2.82, 3.97)	5.91** (4.16, 8.39)	2.30** (1.43, 3.70)	1.23 (0.96, 1.59)	6.54** (4.98, 8.60)	1.21 (0.94, 1.56)	1.50** (1.15, 1.96)
Rich	4.86** (2.74, 8.63)	6.36** (5.19, 7.80)	13.51** (9.00, 20.28)	5.09** (2.94, 8.82)	2.54** (1.95, 3.30)	18.84** (14.21, 24.96)	2.24** (1.73, 2.91)	6.75** (4.89, 9.32)
Richest	30.24** (16.75, 54.59)	20.66** (15.63, 27.31)	36.71** (20.42, 66.00)	9.89** (5.77, 16.91)	12.18** (7.36, 20.17)	69.15** (51.46, 92.93)	8.34** (6.07, 11.45)	42.50** (24.52, 73.65)

Table B.4—Bivariate Analysis—Facility Delivery and Gender Measures

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Household Decision- Making Authority								
High	0.88 (0.67, 1.15) Ref	1.59** (1.41, 1.79) Ref	1.33* (1.03, 1.72) Ref	1.56 (0.87, 2.84) Ref	1.05 (0.87, 1.25) Ref	3.92** (3.44, 4.45) Ref	0.86* (0.74, 1.00) Ref	1.73** (1.44, 2.09) Ref
Low								
Financial Decision Making (Decision on Husband's Earnings)								
Alone/Jointly Husband /Other	NA	1.49** (1.31, 1.70) Ref	1.53** (1.22, 1.93) Ref	1.10 (0.82, 1.48) Ref	NA	2.28** (2.02, 2.57) Ref	0.90 (0.77, 1.04) Ref	1.78** (1.48, 2.13) Ref
Financial Decision Making (Decision on Wife's Earnings)								
Alone/Jointly Husband/Other	1.55* (1.06, 2.26) Ref	2.63* (1.09, 6.36) Ref	2.02** (1.31, 3.13) Ref	1.77** (1.16, 2.72) Ref	1.67** (1.17, 2.38) Ref	1.03 (0.84, 1.27) Ref	1.73** (1.28, 2.34) Ref	2.20** (1.55, 3.10) Ref
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	1.28 (0.89, 1.86)	2.18** (1.93, 2.47)	2.02** (1.61, 2.53)	1.22 (0.93, 1.60)	0.99 (0.81, 1.21)	2.22** (1.97, 2.50)	1.42** (1.20, 1.68)	1.40** (1.16, 1.70)
Wife Has Right to Refuse Sex								
Yes	Ref	NA	Ref	Ref	Ref	Ref	Ref	Ref
No	0.81 (0.64, 1.05)		0.73* (0.56, 0.94)	0.79 (0.59, 1.05)	1.08 (0.88, 1.34)	0.54** (0.49, 0.61)	0.77** (0.67, 0.90)	0.87 (0.74, 1.02)

Table B.5—Bivariate Analysis—Fully Immunized and Descriptive Variables

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Age								
15–19	0.95 (0.46, 1.96)	1.18 (0.47, 2.93)	0.51 (0.18, 1.44)	1.10 (0.53, 2.28)	0.79 (0.56, 1.12)	0.16** (0.09, 0.27)	0.27** (0.13, 0.55)	0.29** (0.17, 0.47)
20–24	0.83 (0.56, 1.23)	1.20 (0.79, 1.81)	0.82 (0.46, 1.47)	0.83 (0.52, 1.34)	1.09 (0.87, 1.37)	0.61** (0.49, 0.75)	0.61** (0.48, 0.78)	0.70** (0.54, 0.92)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.91 (0.65, 1.26)	0.70 (0.44, 1.12)	0.89 (0.55, 1.46)	0.93 (0.55, 1.58)	1.08 (0.84, 1.37)	0.79* (0.65, 0.96)	1.10 (0.86, 1.42)	0.94 (0.72, 1.24)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.88 (0.56, 1.39)	0.70 (0.46, 1.09)	1.09 (0.57, 2.09)	0.84 (0.48, 1.46)	1.30 (0.95, 1.79)	0.99 (0.79, 1.24)	2.84** (1.92, 4.20)	3.97** (2.65, 5.94)
4+	0.94 (0.60, 1.46)	0.62 (0.38, 1.01)	1.16 (0.60, 2.23)	0.72 (0.41, 1.25)	1.22 (0.91, 1.64)	0.62** (0.49, 0.78)	3.06** (2.09, 4.48)	3.73** (2.55, 5.46)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.35 (0.95, 1.92)	0.59* (0.34, 0.99)	1.84 (0.98, 3.44)	0.65 (0.39, 1.08)	1.51** (1.12, 2.03)	4.50** (3.46, 5.86)	0.82 (0.63, 1.06)	1.10 (0.81, 1.48)
Secondary+	2.47** (1.58, 3.86)	1.14 (0.79, 1.65)	1.91* (1.11, 3.28)	1.92* (1.08, 3.41)	2.90** (1.71, 4.93)	12.57** (9.80, 16.13)	1.15 (0.80, 1.66)	1.42 (0.99, 2.03)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.53** (0.34, 0.84)	0.67* (0.46, 0.98)	1.00 (0.59, 1.70)	0.45** (0.27, 0.73)	0.73* (0.54, 0.97)	0.30** (0.24, 0.38)	0.73 (0.50, 1.06)	0.72* (0.56, 0.92)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.88 (0.62, 1.25)	1.11 (0.62, 1.98)	1.00 (0.45, 2.24)	0.86 (0.54, 1.37)	0.99 (0.78, 1.25)	1.84** (1.50, 2.25)	1.46 (0.93, 2.30)	1.06 (0.85, 1.32)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.23 (0.77, 1.95)	1.13 (0.72, 1.77)	1.37 (0.69, 2.72)	1.41 (0.82, 2.44)	0.81 (0.59, 1.12)	2.88** (2.06, 4.02)	0.85 (0.62, 1.17)	0.89 (0.65, 1.21)
Middle	1.85 (0.86, 3.99)	1.61 (0.97, 2.66)	1.04 (0.51, 2.12)	2.22* (1.17, 4.23)	1.04 (0.77, 1.42)	5.50** (3.80, 7.97)	0.63** (0.45, 0.89)	1.00 (0.72, 1.37)
Rich	1.78 (1.00, 3.18)	1.61 (0.98, 2.63)	2.63** (1.23, 5.63)	2.77** (1.48, 5.20)	0.87 (0.64, 1.19)	11.20** (7.73, 16.23)	0.66* (0.45, 0.96)	1.39 (0.97, 1.97)
Richest	4.22** (2.47, 7.22)	1.90* (1.08, 3.34)	2.63** (1.15, 5.99)	3.71** (1.62, 8.51)	1.51* (1.06, 2.16)	24.69** (17.07, 35.73)	1.16 (0.84, 1.60)	1.30 (0.87, 1.94)
Gender of Youngest Child 0–23 Months								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	1.06 (0.70, 1.59)	1.22 (0.86, 1.71)	0.87 (0.54, 1.39)	1.37 (0.95, 1.98)	0.78** (0.65, 0.93)	1.06 (0.92, 1.24)	1.16 (0.87, 1.56)	1.08 (0.80, 1.47)

Table B.6—Bivariate Analysis—Fully Immunized and Gender Measures

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Household Decision Making Authority								
High	0.92 (0.62, 1.36) Ref	1.63** (1.16, 2.28) Ref	1.02 (0.62, 1.68) Ref	1.06 (0.49, 2.28) Ref	0.94 (0.71, 1.25) Ref	3.64** (3.03, 4.38) Ref	1.40** (1.14, 1.73) Ref	1.25 (1.00, 1.57) Ref
Low								
Financial Decision Making (Decision on Husband's Earnings)								
Alone/Jointly Husband/Other	NA Ref	1.30 (0.92, 1.83) Ref	1.10 (0.70, 1.74) Ref	0.97 (0.59, 1.61) Ref	NA Ref	2.08** (1.75, 2.48) Ref	1.05 (0.86, 1.28) Ref	1.34** (1.09, 1.65) Ref
Financial Decision Making (Decision on Wife's Earnings)								
Alone/Jointly Husband/Other	1.83* (1.05, 3.20) Ref	5.14 (0.46, 58.05) Ref	1.65 (0.61, 4.42) Ref	1.54 (0.80, 2.97) Ref	1.93* (1.10, 3.38) Ref	1.54** (1.13, 2.09) Ref	1.35 (0.79, 2.31) Ref	1.36 (0.86, 2.14) Ref
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	1.19 (0.78, 1.82)	1.30 (0.93, 1.82)	1.50 (0.93, 2.42)	1.23 (0.80, 1.89)	1.29 (0.99, 1.67)	2.21** (1.85, 2.64)	1.28* (1.00, 1.65)	1.18 (0.96, 1.45)
Wife Has Right to Refuse Sex								
Yes	Ref	NA	Ref	Ref	Ref	Ref	Ref	Ref
No	0.92 (0.61, 1.38)		1.21 (0.74, 1.97)	0.60* (0.40, 0.88)	1.13 (0.85, 1.51)	0.58** (0.49, 0.70)	0.83 (0.68, 1.01)	1.10 (0.88, 1.36)

Table B.7—Bivariate Analysis—ARI and Descriptive Variables

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Age								
15–19	1.08 (0.52, 2.25)	0.48 (0.22, 1.07)	1.36 (0.28, 6.56)	1.77 (0.59, 5.33)	0.64 (0.27, 1.51)	0.38** (0.19, 0.77)	0.85 (0.40, 1.84)	0.64 (0.20, 2.10)
20–24	0.63* (0.42, 0.94)	0.73 (0.47, 1.14)	1.43 (0.45, 4.49)	0.90 (0.36, 2.27)	0.79 (0.46, 1.39)	0.98 (0.65, 1.47)	1.02 (0.67, 1.54)	0.81 (0.37, 1.76)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.17 (0.63, 2.18)	0.59 (0.31, 1.12)	1.67 (0.62, 4.45)	0.63 (0.29, 1.38)	0.96 (0.55, 1.68)	0.54* (0.33, 0.89)	0.94 (0.55, 1.59)	1.48 (0.59, 3.75)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	1.01 (0.48, 2.12)	1.42 (0.88, 2.31)	1.99 (0.64, 6.23)	0.40 (0.16, 1.03)	1.02 (0.48, 2.15)	1.00 (0.62, 1.62)	1.43 (0.80, 2.56)	1.27 (0.45, 3.60)
4+	1.05 (0.52, 2.10)	0.98 (0.60, 1.60)	1.07 (0.37, 3.16)	0.40* (0.17, 0.95)	1.18 (0.59, 2.37)	0.65 (0.41, 1.05)	0.96 (0.55, 1.67)	1.77 (0.61, 5.13)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.43 (0.78, 2.62)	1.14 (0.59, 2.20)	0.89 (0.34, 2.36)	1.19 (0.52, 2.69)	1.17 (0.52, 2.63)	2.42** (1.50, 3.92)	1.19 (0.80, 1.77)	0.49 (0.20, 1.19)
Secondary+	1.50 (0.73, 3.07)	1.19 (0.77, 1.85)	1.61 (0.62, 4.14)	1.01 (0.31, 3.32)	1.83 (0.77, 4.32)	4.47** (2.86, 6.97)	1.16 (0.63, 2.12)	0.66 (0.21, 2.07)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.06 (0.65, 1.73)	0.71 (0.45, 1.12)	0.49 (0.20, 1.20)	0.42* (0.18, 0.98)	0.59* (0.36, 0.99)	0.97 (0.62, 1.52)	0.98 (0.48, 1.97)	0.96 (0.50, 1.86)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.00 (0.55, 1.81)	1.20 (0.63, 2.29)	2.24 (0.40, 12.65)	0.68 (0.35, 1.32)	1.17 (0.69, 1.99)	1.11 (0.75, 1.65)	1.58 (0.82, 3.04)	0.70 (0.33, 1.51)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.10 (0.52, 2.32)	1.18 (0.66, 2.11)	2.30 (0.79, 6.71)	1.40 (0.58, 3.39)	1.53 (0.63, 3.71)	1.42 (0.90, 2.24)	0.65 (0.40, 1.05)	0.53 (0.18, 1.56)
Middle	1.12 (0.55, 2.31)	1.30 (0.72, 2.33)	1.78 (0.58, 5.48)	4.98** (2.03, 12.25)	0.94 (0.39, 2.26)	1.88* (1.09, 3.22)	0.70 (0.37, 1.32)	0.72 (0.25, 2.06)
Rich	1.08 (0.64, 1.81)	2.36* (1.23, 4.52)	3.92* (1.22, 12.62)	1.55 (0.63, 3.81)	2.04 (0.90, 4.60)	4.59** (2.43, 8.67)	0.72 (0.42, 1.24)	0.90 (0.32, 2.57)
Richest	1.67 (0.88, 3.16)	1.79 (0.89, 3.60)	2.09 (0.43, 10.12)	17.18** (2.22, 132.83)	3.16** (1.49, 6.70)	5.04** (2.49, 10.24)	1.12 (0.56, 2.24)	0.47 (0.13, 1.64)
Gender of Youngest Child 0–23 Months								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.84 (0.43, 1.67)	0.82 (0.55, 1.22)	0.52 (0.22, 1.24)	0.61 (0.35, 1.08)	1.06 (0.69, 1.64)	0.99 (0.69, 1.41)	0.75 (0.52, 1.08)	0.92 (0.51, 1.64)

Table B.8—Bivariate Analysis—ARI and Gender Measures

	DRC OR (CI)	Egypt OR (CI)	Ghana OR (CI)	Liberia OR (CI)	Mali OR (CI)	Nigeria OR (CI)	Uganda OR (CI)	Zambia OR (CI)
Household Decision-Making Authority								
High	1.58 (1.00, 2.49) Ref	1.29 (0.86, 1.92) Ref	0.84 (0.35, 1.99) Ref	0.50 (0.09, 2.65) Ref	0.90 (0.51, 1.58) Ref	1.75** (1.18, 2.61) Ref	1.45* (1.01, 2.08) Ref	1.41 (0.72, 2.73) Ref
Low								
Financial Decision Making (Decision on Husband's Earnings)								
Alone/Jointly Husband/Other	NA Ref	0.99 (0.62, 1.59) Ref	0.56 (0.26, 1.23) Ref	1.03 (0.52, 2.03) Ref	NA Ref	1.59* (1.06, 2.37) Ref	1.50 (0.99, 2.28) Ref	1.40 (0.78, 2.52) Ref
Financial Decision Making (Decision on Wife's Earnings)								
Alone/Jointly Husband/Other	1.83* (1.05, 3.20) Ref	NA Ref	1.65 (0.61, 4.43) Ref	1.54 (0.80, 2.97) Ref	1.93* (1.10, 3.38) Ref	1.54** (1.13, 2.09) Ref	0.80 (0.31, 2.04) Ref	0.84 (0.45, 1.60) Ref
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	1.24 (0.68, 2.26) Ref	1.32 (0.89, 1.95) Ref	1.41 (0.62, 3.21) Ref	0.90 (0.42, 1.89) Ref	0.69 (0.37, 1.29) Ref	1.46* (1.01, 2.11) Ref	1.41 (0.91, 2.17) Ref	0.94 (0.48, 1.85) Ref
Wife Has Right to Refuse Sex								
Yes	Ref	NA	Ref	Ref	Ref	Ref	Ref	Ref
No	1.31 (0.78, 2.19) Ref		0.53 (0.24, 1.18) Ref	0.64 (0.33, 1.24) Ref	1.09 (0.47, 2.54) Ref	0.97 (0.68, 1.38) Ref	0.79 (0.53, 1.19) Ref	0.63 (0.35, 1.14) Ref

Appendix C

Table C.1—Model 1: Multivariate Logistic Regression for Low BMI

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	2.23 (0.87, 5.66)	1.05 (0.24, 4.50)	0.45 (0.08, 2.44)	1.27 (0.53, 3.02)	1.30 (0.85, 1.98)	1.26 (0.97, 1.63)	0.36 (0.08, 1.66)	1.35 (0.59, 3.08)
20–24	1.29 (0.84, 1.99)	1.05 (0.50, 2.21)	0.88 (0.41, 1.89)	1.28 (0.77, 2.12)	0.99 (0.71, 1.38)	1.14 (0.96, 1.36)	0.55 (0.25, 1.23)	0.96 (0.59, 1.57)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.81 (0.46, 1.42)	0.47 (0.14, 1.61)	1.44 (0.81, 2.58)	1.26 (0.76, 2.08)	1.09 (0.82, 1.43)	0.77** (0.67, 0.90)	2.52** (1.51, 4.21)	1.01 (0.65, 1.57)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.86 (0.46, 1.60)	0.53 (0.26, 1.07)	1.29 (0.56, 2.97)	0.42** (0.23, 0.75)	1.00 (0.71, 1.40)	0.99 (0.82, 1.19)	1.48 (0.58, 3.82)	0.91 (0.48, 1.73)
4+	1.22 (0.59, 2.54)	0.47 (0.17, 1.35)	1.20 (0.44, 3.25)	0.51* (0.28, 0.93)	0.91 (0.56, 1.50)	1.16 (0.94, 1.44)	0.75 (0.24, 2.33)	0.98 (0.50, 1.94)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	0.95 (0.60, 1.51)	0.76 (0.29, 2.00)	0.96 (0.57, 1.63)	1.13 (0.75, 1.71)	0.81 (0.57, 1.16)	0.65** (0.55, 0.77)	0.71 (0.43, 1.18)	0.98 (0.66, 1.46)
Secondary+	1.05 (0.59, 1.84)	0.46 (0.20, 1.02)	0.94 (0.51, 1.74)	0.74 (0.39, 1.42)	0.79 (0.41, 1.52)	0.54** (0.43, 0.66)	0.69 (0.26, 1.81)	0.73 (0.41, 1.32)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.82 (0.44, 1.55)	0.61 (0.30, 1.24)	1.16 (0.57, 2.36)	1.43 (0.86, 2.37)	1.21 (0.84, 1.75)	0.94 (0.76, 1.15)	0.98 (0.32, 2.97)	1.22 (0.70, 2.13)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.15 (0.68, 1.92)	1.04 (0.38, 2.85)	2.16 (0.81, 5.79)	0.93 (0.59, 1.47)	0.74* (0.59, 0.93)	0.89 (0.79, 1.00)	0.53 (0.17, 1.63)	0.98 (0.70, 1.36)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	0.63 (0.36, 1.09)	0.33* (0.14, 0.77)	1.40 (0.83, 2.36)	0.77 (0.44, 1.33)	1.28 (0.98, 1.66)	0.79** (0.69, 0.91)	0.61 (0.35, 1.09)	1.19 (0.78, 1.84)
Middle	0.78 (0.44, 1.37)	0.36 (0.13, 1.01)	1.76 (0.91, 3.40)	0.57 (0.31, 1.04)	1.18 (0.89, 1.56)	0.59** (0.49, 0.71)	0.49* (0.27, 0.88)	1.36 (0.84, 2.22)
Rich	0.43* (0.21, 0.86)	0.26 (0.07, 1.01)	0.28 (0.07, 1.03)	0.67 (0.36, 1.25)	1.10 (0.81, 1.51)	0.57** (0.46, 0.72)	0.39** (0.20, 0.76)	1.11 (0.59, 2.10)
Richest	0.42 (0.18, 1.00)	0.26 (0.06, 1.17)	0.75 (0.20, 2.77)	1.07 (0.47, 2.48)	1.19 (0.58, 2.45)	0.42** (0.30, 0.59)	0.39 (0.14, 1.12)	1.35 (0.58, 3.15)

Table C.2—Model 2: Multivariate Logistic Regression for Low BMI (*p<0.05 **p<0.01)

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	2.24 (0.88, 5.69)	1.30 (0.28, 6.10)	0.48 (0.09, 2.59)	1.27 (0.51, 3.12)	1.37 (0.89, 2.12)	1.25 (0.96, 1.62)	0.32 (0.07, 1.46)	1.22 (0.52, 2.84)
20–24	1.19 (0.75, 1.90)	1.33 (0.63, 2.79)	0.90 (0.41, 1.99)	1.33 (0.79, 2.26)	1.04 (0.75, 1.44)	1.11 (0.93, 1.34)	0.57 (0.25, 1.30)	0.90 (0.54, 1.49)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.82 (0.47, 1.43)	0.54 (0.16, 1.84)	1.60 (0.88, 2.93)	1.28 (0.76, 2.17)	1.11 (0.84, 1.47)	0.77** (0.66, 0.90)	2.49** (1.47, 4.21)	0.94 (0.59, 1.51)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.82 (0.43, 1.54)	0.66 (0.34, 1.31)	1.50 (0.61, 3.71)	0.41** (0.23, 0.74)	1.01 (0.72, 1.43)	1.02 (0.84, 1.24)	1.44 (0.55, 3.75)	0.90 (0.47, 1.74)
4+	1.21 (0.56, 2.58)	0.59 (0.20, 1.75)	1.30 (0.44, 3.80)	0.51* (0.27, 0.95)	0.94 (0.57, 1.55)	1.18 (0.95, 1.48)	0.69 (0.22, 2.20)	0.96 (0.48, 1.91)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	0.92 (0.58, 1.49)	0.90 (0.34, 2.43)	1.01 (0.58, 1.73)	1.15 (0.74, 1.79)	0.83 (0.58, 1.19)	0.70** (0.59, 0.83)	0.68 (0.41, 1.14)	1.08 (0.71, 1.64)
Secondary+	1.02 (0.60, 1.75)	0.48 (0.19, 1.21)	1.02 (0.54, 1.94)	0.76 (0.39, 1.47)	0.82 (0.42, 1.58)	0.61** (0.49, 0.76)	0.61 (0.22, 1.73)	0.87 (0.48, 1.59)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.82 (0.42, 1.60)	0.52 (0.25, 1.06)	1.09 (0.54, 2.20)	1.49 (0.85, 2.63)	1.22 (0.83, 1.78)	0.91 (0.74, 1.11)	0.93 (0.29, 3.01)	1.28 (0.73, 2.27)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.22 (0.73, 2.03)	1.18 (0.42, 3.30)	2.11 (0.81, 5.47)	0.87 (0.54, 1.39)	0.71** (0.57, 0.89)	0.94 (0.83, 1.07)	0.49 (0.15, 1.54)	1.00 (0.71, 1.40)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	0.58 (0.33, 1.02)	0.36* (0.15, 0.84)	1.57 (0.91, 2.70)	0.79 (0.45, 1.40)	1.28 (0.98, 1.67)	0.82** (0.71, 0.94)	0.63 (0.35, 1.13)	1.15 (0.76, 1.75)
Middle	0.81 (0.45, 1.43)	0.31* (0.10, 0.93)	1.94 (0.98, 3.86)	0.61 (0.33, 1.12)	1.15 (0.86, 1.53)	0.62** (0.51, 0.74)	0.50* (0.28, 0.89)	1.49 (0.91, 2.43)
Rich	0.42* (0.20, 0.86)	0.30 (0.08, 1.13)	0.18* (0.04, 0.95)	0.78 (0.40, 1.49)	1.06 (0.78, 1.46)	0.61** (0.48, 0.77)	0.40** (0.20, 0.79)	1.22 (0.64, 2.30)
Richest	0.43 (0.18, 1.04)	0.33 (0.07, 1.50)	0.83 (0.23, 2.98)	1.30 (0.49, 3.43)	1.16 (0.56, 2.42)	0.45** (0.32, 0.65)	0.38 (0.13, 1.11)	1.51 (0.65, 3.53)
Household Decision-Making Authority								
High	0.60* (0.37, 0.99)	0.47 (0.20, 1.08)	1.03 (0.64, 1.67)	1.08 (0.48, 2.43)	1.08 (0.83, 1.41)	0.68** (0.56, 0.82)	1.25 (0.81, 1.93)	1.30 (0.94, 1.80)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Financial Decision Making								
Husband/Other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Alone/Jointly	N/A	2.12* (1.00, 4.48)	0.59* (0.36, 0.94)	0.80 (0.53, 1.19)	n/a	1.04 (0.85, 1.26)	0.61* (0.39, 0.96)	0.59** (0.40, 0.86)
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	0.90 (0.57, 1.41)	0.70 (0.35, 1.40)	0.90 (0.57, 1.41)	0.82 (0.48, 1.42)	0.83 (0.64, 1.06)	0.89 (0.79, 1.02)	1.06 (0.66, 1.68)	1.15 (0.84, 1.56)
Wife Has Right To Refuse Sex								
Yes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
No	1.06 (0.71, 1.59)	n/a	1.35 (0.85, 2.18)	0.84 (0.52, 1.37)	1.20 (0.86, 1.65)	1.13 (0.98, 1.29)	1.11 (0.71, 1.71)	1.30 (0.94, 1.80)

Table C.3—Model 1: Multivariate Logistic Regression for Facility Delivery

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	0.79 (0.43, 1.44)	0.95 (0.69, 1.32)	0.66 (0.30, 1.43)	1.17 (0.68, 2.01)	1.02 (0.80, 1.31)	0.57** (0.44, 0.74)	0.70 (0.45, 1.10)	0.94 (0.59, 1.50)
20–24	1.10 (0.79, 1.54)	0.85* (0.73, 0.99)	0.81 (0.53, 1.25)	0.96 (0.70, 1.31)	0.91 (0.76, 1.10)	0.59** (0.51, 0.68)	0.77* (0.60, 0.99)	0.83 (0.64, 1.06)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.06 (0.76, 1.48)	1.44 (1.21, 1.73)	1.27 (0.92, 1.76)	1.27 (0.95, 1.70)	0.95 (0.77, 1.16)	1.33** (1.19, 1.48)	0.84 (0.69, 1.02)	0.97 (0.77, 1.23)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.62** (0.43, 0.88)	0.48** (0.41, 0.58)	0.59* (0.38, 0.92)	0.78 (0.50, 1.22)	0.74** (0.60, 0.92)	0.62** (0.53, 0.73)	0.53** (0.40, 0.71)	0.65* (0.45, 0.92)
4+	0.59** (0.39, 0.87)	0.32** (0.25, 0.39)	0.44** (0.27, 0.71)	0.65 (0.41, 1.03)	0.71** (0.56, 0.91)	0.40** (0.33, 0.49)	0.36** (0.25, 0.50)	0.49** (0.33, 0.73)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.35* (1.03, 1.77)	1.25* (1.03, 1.52)	1.60** (1.14, 2.24)	1.07 (0.83, 1.39)	2.69** (2.12, 3.42)	3.45** (2.97, 4.01)	1.53** (1.24, 1.88)	1.66** (1.19, 2.30)
Secondary+	2.53** (1.65, 3.90)	1.54** (1.31, 1.79)	2.46** (1.74, 3.48)	1.84** (1.31, 2.61)	4.37** (2.68, 7.12)	7.13** (5.98, 8.51)	3.03** (2.21, 4.17)	2.38** (1.63, 3.46)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.46* (0.21, 0.97)	0.70** (0.58, 0.85)	0.36** (0.25, 0.53)	0.39** (0.26, 0.59)	0.27** (0.18, 0.39)	0.74** (0.61, 0.90)	0.36** (0.21, 0.64)	0.34** (0.24, 0.49)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.21 (0.81, 1.80)	1.38** (1.11, 1.72)	1.20 (0.74, 1.94)	0.73* (0.55, 0.96)	1.49** (1.20, 1.85)	1.69** (1.48, 1.93)	0.50** (0.34, 0.74)	1.01 (0.80, 1.26)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.09 (0.84, 1.41)	1.55** (1.31, 1.84)	2.66** (1.94, 3.65)	1.20 (0.80, 1.81)	1.09 (0.86, 1.36)	1.81** (1.43, 2.30)	1.05 (0.83, 1.33)	1.01 (0.78, 1.31)
Middle	1.49* (1.00, 2.21)	2.42** (2.01, 2.92)	3.32** (2.24, 4.91)	1.67* (1.02, 2.72)	1.11 (0.87, 1.43)	3.50** (2.70, 4.54)	1.06 (0.82, 1.37)	1.24 (0.94, 1.63)
Rich	2.72** (1.34, 5.51)	3.81** (3.00, 4.85)	5.90** (3.71, 9.38)	2.48** (1.38, 4.44)	1.64** (1.22, 2.22)	6.58** (5.02, 8.64)	1.65** (1.27, 2.16)	2.71** (1.89, 3.90)
Richest	9.94** (4.46, 22.15)	10.09** (7.35, 13.86)	10.35** (4.87, 21.97)	3.23** (1.72, 6.07)	2.88** (1.69, 4.92)	14.18** (10.52, 19.11)	3.12** (2.15, 4.54)	11.05** (5.99, 20.40)

Table C.4—Model 2: Multivariate Logistic Regression for Facility Delivery

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	0.72 (0.39, 1.31)	0.95 (0.68, 1.33)	0.71 (0.32, 1.57)	1.07 (0.60, 1.92)	1.00 (0.78, 1.29)	0.65** (0.50, 0.85)	0.73 (0.46, 1.13)	0.98 (0.60, 1.58)
20–24	1.04 (0.73, 1.48)	0.84* (0.72, 0.99)	0.81 (0.52, 1.26)	0.96 (0.68, 1.34)	0.92 (0.77, 1.11)	0.62** (0.54, 0.72)	0.78 (0.60, 1.00)	0.86 (0.66, 1.11)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.03 (0.74, 1.44)	1.45** (1.21, 1.74)	1.23 (0.88, 1.72)	1.23 (0.92, 1.65)	0.95 (0.78, 1.17)	1.25** (1.11, 1.40)	0.85 (0.70, 1.05)	1.00 (0.78, 1.28)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.58** (0.41, 0.83)	0.48** (0.40, 0.58)	0.60* (0.39, 0.94)	0.80 (0.50, 1.28)	0.73** (0.59, 0.91)	0.63** (0.53, 0.75)	0.55** (0.41, 0.73)	0.62* (0.43, 0.90)
4+	0.56** (0.38, 0.84)	0.31** (0.25, 0.39)	0.46** (0.28, 0.75)	0.67 (0.41, 1.09)	0.70** (0.55, 0.90)	0.42** (0.35, 0.52)	0.36** (0.26, 0.51)	0.48** (0.32, 0.73)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.29 (0.98, 1.70)	1.22* (1.00, 1.48)	1.64** (1.16, 2.32)	1.04 (0.80, 1.36)	2.68** (2.11, 3.41)	2.95** (2.53, 3.43)	1.49** (1.22, 1.84)	1.64** (1.17, 2.29)
Secondary+	2.37** (1.55, 3.62)	1.50** (1.28, 1.76)	2.35** (1.64, 3.36)	1.73** (1.20, 2.49)	4.30** (2.65, 6.97)	5.90** (4.93, 7.05)	3.04** (2.21, 4.18)	2.24** (1.52, 3.31)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.42* (0.20, 0.90)	0.70** (0.58, 0.85)	0.35** (0.24, 0.52)	0.39** (0.26, 0.59)	0.27** (0.18, 0.39)	0.72** (0.59, 0.88)	0.36** (0.20, 0.65)	0.34** (0.24, 0.49)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.21 (0.80, 1.84)	1.38** (1.11, 1.72)	1.17 (0.71, 1.92)	0.69* (0.51, 0.93)	1.49** (1.18, 1.88)	1.58** (1.37, 1.81)	0.51** (0.35, 0.75)	0.98 (0.78, 1.24)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.10 (0.85, 1.42)	1.51** (1.27, 1.80)	2.49** (1.81, 3.42)	1.15 (0.74, 1.78)	1.08 (0.86, 1.36)	1.78** (1.40, 2.25)	1.05 (0.83, 1.34)	0.99 (0.76, 1.29)
Middle	1.53* (1.03, 2.26)	2.35** (1.94, 2.84)	3.17** (2.14, 4.69)	1.75* (1.06, 2.89)	1.11 (0.86, 1.42)	3.20** (2.47, 4.15)	1.04 (0.80, 1.35)	1.18 (0.89, 1.56)
Rich	2.64** (1.30, 5.35)	3.75** (2.92, 4.80)	5.72** (3.54, 9.23)	2.40** (1.33, 4.35)	1.64** (1.22, 2.21)	6.01** (4.57, 7.89)	1.61** (1.23, 2.10)	2.58** (1.78, 3.75)
Richest	9.68** (4.36, 21.49)	9.46** (6.84, 13.07)	8.94** (4.21, 18.96)	3.12** (1.66, 5.86)	2.86** (1.68, 4.88)	12.82** (9.46, 17.37)	3.00** (2.07, 4.34)	10.02** (5.38, 18.68)
Household Decision-Making Authority								
High	0.76 (0.55, 1.04)	1.02 (0.89, 1.18)	1.03 (0.76, 1.39)	1.89 (0.99, 3.60)	0.99 (0.77, 1.28)	1.66** (1.44, 1.90)	0.98 (0.83, 1.17)	1.13 (0.92, 1.40)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Financial Decision Making								
Husband/Other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Alone/Jointly	N/A	1.03 (0.88, 1.19)	1.14 (0.86, 1.49)	0.89 (0.66, 1.18)	n/a	1.06 (0.93, 1.21)	0.91 (0.77, 1.07)	1.21 (1.00, 1.46)
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	1.14 (0.73, 1.80)	1.12 (0.98, 1.29)	1.44** (1.11, 1.87)	0.97 (0.75, 1.27)	0.99 (0.78, 1.26)	1.16* (1.03, 1.30)	1.11 (0.93, 1.32)	1.14 (0.92, 1.42)
Wife Has Right To Refuse Sex								
Yes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
No	0.92 (0.73, 1.17)	n/a	0.84 (0.64, 1.09)	0.93 (0.69, 1.25)	1.15 (0.93, 1.43)	0.77** (0.69, 0.86)	0.83* (0.70, 0.98)	0.91 (0.75, 1.10)

Table C.5—Model 1: Multivariate Logistic Regression for Fully Immunized

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	1.07 (0.48, 2.39)	1.47 (0.51, 4.25)	0.60 (0.16, 2.21)	0.89 (0.32, 2.48)	0.93 (0.56, 1.56)	0.29** (0.16, 0.54)	0.85 (0.28, 2.60)	0.67 (0.27, 1.67)
20–24	1.05 (0.63, 1.76)	1.34 (0.83, 2.19)	1.09 (0.54, 2.19)	0.64 (0.34, 1.22)	1.18 (0.84, 1.65)	0.72* (0.56, 0.93)	0.57* (0.37, 0.88)	1.06 (0.67, 1.67)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.04 (0.72, 1.49)	0.61 (0.37, 1.01)	0.88 (0.48, 1.61)	0.97 (0.55, 1.72)	1.10 (0.86, 1.40)	1.13 (0.90, 1.42)	0.96 (0.66, 1.40)	0.65* (0.43, 0.97)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.92 (0.57, 1.48)	0.88 (0.53, 1.47)	1.25 (0.57, 2.74)	0.65 (0.35, 1.21)	1.29 (0.87, 1.89)	0.88 (0.67, 1.15)	3.17** (1.35, 7.45)	4.74** (2.55, 8.82)
4+	0.97 (0.54, 1.72)	1.13 (0.60, 2.12)	1.56 (0.64, 3.78)	0.55 (0.25, 1.24)	1.38 (0.82, 2.32)	0.71* (0.52, 0.96)	2.77* (1.16, 6.64)	4.89** (2.41, 9.92)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.18 (0.79, 1.78)	0.51* (0.30, 0.89)	1.72 (0.86, 3.45)	0.62 (0.36, 1.08)	1.47* (1.07, 2.03)	2.81** (2.14, 3.69)	1.31 (0.86, 1.98)	0.98 (0.64, 1.50)
Secondary+	1.56 (0.83, 2.91)	0.81 (0.52, 1.27)	1.60 (0.85, 3.00)	1.11 (0.61, 2.01)	2.52** (1.47, 4.32)	4.91** (3.71, 6.51)	2.00* (1.12, 3.59)	1.15 (0.65, 2.02)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.99 (0.53, 1.87)	0.87 (0.56, 1.37)	2.12 (0.99, 4.56)	0.69 (0.39, 1.20)	0.87 (0.63, 1.20)	0.86 (0.67, 1.10)	1.30 (0.60, 2.81)	0.83 (0.49, 1.42)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.22 (0.85, 1.73)	1.18 (0.63, 2.23)	1.21 (0.51, 2.88)	1.32 (0.80, 2.20)	0.99 (0.77, 1.26)	1.40** (1.14, 1.72)	1.09 (0.53, 2.22)	1.03 (0.76, 1.38)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.20 (0.74, 1.94)	1.28 (0.77, 2.11)	1.45 (0.72, 2.94)	1.34 (0.78, 2.32)	0.82 (0.59, 1.14)	2.07** (1.48, 2.90)	1.16 (0.73, 1.82)	0.91 (0.62, 1.34)
Middle	1.83 (0.88, 3.82)	1.69 (0.98, 2.92)	1.26 (0.51, 3.15)	2.18 (1.08, 4.38)	1.08 (0.79, 1.48)	3.09** (2.12, 4.51)	0.72 (0.44, 1.18)	0.96 (0.65, 1.43)
Rich	1.65 (0.77, 3.53)	1.81 (0.97, 3.38)	3.90** (1.40, 10.88)	2.27* (1.17, 4.43)	0.85 (0.62, 1.16)	4.24** (2.85, 6.32)	0.69 (0.40, 1.19)	1.01 (0.58, 1.77)
Richest	3.55** (1.51, 8.39)	2.03 (0.96, 4.32)	4.28** (1.30, 14.06)	2.54* (1.00, 6.46)	1.10 (0.72, 1.68)	6.22** (4.05, 9.55)	1.08 (0.58, 2.00)	0.90 (0.41, 1.95)
Gender of Youngest Child (12–23 Months)								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	1.04 (0.70, 1.55)	1.25 (0.88, 1.76)	0.87 (0.54, 1.41)	1.35 (0.93, 1.96)	0.77** (0.64, 0.94)	1.05 (0.88, 1.24)	1.16 (0.86, 1.57)	1.01 (0.80, 1.52)

Table C.6—Model 2: Multivariate Logistic Regression for Fully Immunized

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	0.94 (0.42, 2.12)	1.50 (0.51, 4.40)	0.71 (0.18, 2.85)	0.84 (0.27, 2.56)	0.96 (0.57, 1.61)	0.32** (0.17, 0.60)	0.81 (0.26, 2.51)	0.77 (0.31, 1.96)
20–24	1.04 (0.62, 1.75)	1.39 (0.85, 2.28)	1.05 (0.52, 2.11)	0.68 (0.34, 1.33)	1.21 (0.87, 1.70)	0.79 (0.61, 1.02)	0.52** (0.33, 0.80)	1.19 (0.74, 1.91)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.07 (0.74, 1.56)	0.59* (0.35, 0.99)	0.88 (0.47, 1.63)	0.97 (0.50, 1.87)	1.14 (0.89, 1.46)	1.08 (0.85, 1.36)	0.99 (0.68, 1.45)	0.59* (0.39, 0.89)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.85 (0.53, 1.38)	0.90 (0.54, 1.51)	1.26 (0.58, 2.77)	0.62 (0.33, 1.19)	1.27 (0.86, 1.86)	0.88 (0.67, 1.16)	3.12* (1.30, 7.52)	5.21** (2.74, 9.90)
4+	0.91 (0.51, 1.61)	1.17 (0.62, 2.21)	1.54 (0.63, 3.77)	0.55 (0.22, 1.37)	1.38 (0.83, 2.32)	0.74 (0.54, 1.01)	2.51* (1.02, 6.19)	6.00** (2.86, 12.59)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.18 (0.77, 1.81)	0.51* (0.29, 0.89)	1.73 (0.87, 3.44)	0.61 (0.34, 1.12)	1.51* (1.10, 2.07)	2.47** (1.86, 3.27)	1.24 (0.81, 1.89)	0.89 (0.57, 1.39)
Secondary+	1.56 (0.81, 2.97)	0.77 (0.49, 1.21)	1.65 (0.88, 3.11)	1.15 (0.61, 2.15)	2.43** (1.41, 4.19)	3.89** (2.89, 5.24)	1.78 (0.98, 3.22)	1.01 (0.56, 1.84)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.91 (0.49, 1.72)	0.85 (0.54, 1.32)	2.14 (0.99, 4.63)	0.75 (0.42, 1.34)	0.84 (0.60, 1.15)	0.88 (0.68, 1.14)	1.32 (0.61, 2.86)	0.76 (0.44, 1.29)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.24 (0.86, 1.80)	1.11 (0.59, 2.11)	1.25 (0.51, 3.06)	1.46 (0.85, 2.50)	1.00 (0.79, 1.27)	1.26* (1.02, 1.55)	1.10 (0.53, 2.30)	1.03 (0.77, 1.40)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.21 (0.74, 1.98)	1.19 (0.72, 1.96)	1.39 (0.69, 2.83)	1.25 (0.68, 2.30)	0.83 (0.59, 1.16)	2.08** (1.47, 2.94)	1.20 (0.76, 1.91)	0.87 (0.57, 1.33)
Middle	1.76 (0.83, 3.73)	1.56 (0.89, 2.74)	1.35 (0.53, 3.42)	2.35* (1.09, 5.04)	1.08 (0.79, 1.48)	2.89** (1.97, 4.25)	0.76 (0.46, 1.27)	0.91 (0.61, 1.37)
Rich	1.56 (0.71, 3.41)	1.61 (0.85, 3.04)	4.06* (1.38, 11.94)	1.88 (0.94, 3.76)	0.84 (0.61, 1.16)	4.11** (2.74, 6.17)	0.69 (0.39, 1.22)	0.88 (0.49, 1.59)
Richest	3.39** (1.41, 8.14)	1.82 (0.85, 3.91)	4.00* (1.15, 13.88)	2.37 (0.89, 6.31)	1.04 (0.68, 1.59)	5.83** (3.77, 9.03)	1.12 (0.61, 2.06)	0.74 (0.34, 1.61)
Gender of Youngest Child (12–23 Months)								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	1.05 (0.70, 1.57)	1.20 (0.85, 1.71)	0.82 (0.51, 1.32)	1.47 (1.00, 2.18)	0.75** (0.61, 0.92)	1.09 (0.91, 1.29)	1.15 (0.85, 1.57)	1.14 (0.82, 1.58)
Household Decision-Making Authority								
High	0.83 (0.54, 1.27)	1.39 (0.91, 2.12)	0.95 (0.55, 1.64)	1.06 (0.44, 2.57)	0.89 (0.66, 1.19)	1.64** (1.31, 2.05)	0.89 (0.65, 1.21)	1.18 (0.85, 1.62)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref

Table C.6—Model 2: Multivariate Logistic Regression for Fully Immunized *continued*

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Financial Decision Making								
Husband/Other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Alone/Jointly	N/A	1.02 (0.68, 1.53)	0.90 (0.54, 1.50)	1.05 (0.63, 1.75)	N/A	1.11 (0.88, 1.39)	1.11 (0.79, 1.56)	1.33 (0.99, 1.78)
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	1.18 (0.76, 1.84)	1.07 (0.73, 1.56)	1.30 (0.77, 2.19)	1.13 (0.68, 1.87)	1.26 (0.96, 1.66)	1.34** (1.11, 1.62)	1.19 (0.84, 1.70)	1.11 (0.83, 1.47)
Wife Has Right To Refuse Sex								
Yes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
No	0.96 (0.62, 1.48)	n/a	1.36 (0.78, 2.37)	0.59* (0.39, 0.90)	1.18 (0.87, 1.61)	0.83* (0.69, 1.00)	0.76 (0.56, 1.03)	1.16 (0.87, 1.55)

Table C.7—Model 1: Multivariate Logistic Regression for Treatment for ARI

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	0.81 (0.33, 2.01)	0.61 (0.26, 1.40)	6.13 (0.60, 62.32)	1.46 (0.34, 6.37)	0.58 (0.19, 1.79)	0.32** (0.14, 0.71)	0.43 (0.16, 1.17)	1.04 (0.23, 4.65)
20–24	0.47* (0.26, 0.85)	0.75 (0.45, 1.25)	2.26 (0.45, 11.26)	0.96 (0.29, 3.19)	0.70 (0.35, 1.39)	0.77 (0.47, 1.28)	0.65 (0.35, 1.21)	0.98 (0.39, 2.48)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.29 (0.70, 2.38)	0.70 (0.34, 1.44)	1.64 (0.49, 5.49)	0.54 (0.22, 1.38)	1.01 (0.54, 1.89)	0.72 (0.40, 1.28)	0.93 (0.54, 1.62)	1.24 (0.44, 3.49)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.94 (0.43, 2.05)	1.18 (0.69, 2.02)	4.52 (0.91, 22.50)	0.83 (0.27, 2.54)	0.84 (0.35, 2.02)	0.76 (0.42, 1.39)	1.10 (0.57, 2.15)	1.19 (0.36, 4.00)
4+	0.58 (0.22, 1.53)	0.99 (0.51, 1.93)	2.37 (0.45, 12.53)	0.90 (0.24, 3.36)	0.86 (0.31, 2.40)	0.65 (0.33, 1.25)	0.57 (0.23, 1.41)	1.62 (0.38, 6.99)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.42 (0.77, 2.60)	0.88 (0.46, 1.70)	0.46 (0.13, 1.55)	0.88 (0.36, 2.13)	0.91 (0.41, 2.03)	2.03** (1.20, 3.46)	1.22 (0.78, 1.91)	0.54 (0.21, 1.40)
Secondary+	1.47 (0.66, 3.24)	0.80 (0.47, 1.36)	0.92 (0.25, 3.36)	0.69 (0.17, 2.72)	0.76 (0.29, 1.98)	2.45** (1.42, 4.24)	0.92 (0.44, 1.91)	1.01 (0.28, 3.59)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.51 (0.87, 2.63)	0.91 (0.55, 1.51)	0.82 (0.24, 2.83)	0.48 (0.18, 1.28)	1.95 (0.72, 5.28)	2.99** (1.66, 5.37)	1.12 (0.50, 2.53)	0.79 (0.27, 2.30)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.07 (0.58, 1.95)	1.14 (0.57, 2.26)	1.76 (0.38, 8.19)	1.45 (0.73, 2.87)	1.29 (0.72, 2.30)	1.00 (0.66, 1.50)	1.89 (0.92, 3.90)	0.63 (0.29, 1.40)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.03 (0.48, 2.19)	1.13 (0.61, 2.10)	2.40 (0.70, 8.23)	1.39 (0.54, 3.58)	1.63 (0.67, 4.00)	1.22 (0.75, 1.98)	0.55* (0.34, 0.89)	0.54 (0.17, 1.70)
Middle	1.20 (0.62, 2.31)	1.40 (0.72, 2.74)	3.27 (0.59, 18.20)	4.60** (1.69, 12.51)	1.00 (0.41, 2.44)	1.60 (0.91, 2.81)	0.59 (0.31, 1.14)	0.79 (0.27, 2.36)
Rich	1.32 (0.61, 2.85)	2.29 (1.12, 4.68)	6.60* (1.10, 39.39)	1.27 (0.47, 3.45)	2.37* (1.02, 5.52)	4.34** (2.22, 8.51)	0.74 (0.41, 1.36)	0.73 (0.18, 2.90)
Richest	1.95 (0.80, 4.74)	1.60 (0.67, 3.82)	4.39 (0.34, 56.21)	12.72* (1.72, 94.07)	6.84** (1.92, 24.29)	5.29** (1.99, 14.08)	1.24 (0.56, 2.74)	0.32 (0.06, 1.84)
Gender of Youngest Child (0–23 Months)								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.78 (0.39, 1.58)	0.82 (0.55, 1.23)	0.43 (0.15, 1.22)	0.74 (0.40, 1.37)	0.90 (0.56, 1.43)	1.13 (0.77, 1.66)	0.74 (0.51, 1.06)	0.87 (0.47, 1.62)

Table C.8—Model 2: Multivariate Logistic Regression for Treatment for ARI

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Age								
15–19	0.95 (0.37, 2.42)	0.67 (0.28, 1.61)	5.79 (0.40, 84.63)	1.61 (0.33, 7.83)	0.65 (0.21, 2.08)	0.32** (0.14, 0.74)	0.37* (0.14, 0.99)	1.31 (0.26, 6.50)
20–24	0.53* (0.29, 0.97)	0.74 (0.44, 1.26)	2.13 (0.44, 10.44)	0.74 (0.24, 2.29)	0.76 (0.37, 1.54)	0.82 (0.48, 1.39)	0.64 (0.34, 1.20)	1.01 (0.39, 2.62)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	1.22 (0.67, 2.21)	0.63 (0.30, 1.32)	2.00 (0.50, 8.06)	0.51 (0.21, 1.28)	1.04 (0.56, 1.94)	0.75 (0.41, 1.38)	0.91 (0.51, 1.61)	1.25 (0.43, 3.65)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.98 (0.44, 2.18)	1.18 (0.68, 2.05)	6.15* (1.26, 29.91)	0.89 (0.27, 2.91)	0.81 (0.33, 1.97)	0.76 (0.40, 1.41)	1.00 (0.49, 2.06)	1.09 (0.28, 4.17)
4+	0.62 (0.23, 1.69)	0.98 (0.50, 1.90)	1.76 (0.31, 10.00)	0.77 (0.20, 2.91)	0.91 (0.33, 2.57)	0.67 (0.34, 1.32)	0.44 (0.18, 1.11)	1.62 (0.36, 7.38)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.51 (0.81, 2.81)	0.92 (0.47, 1.81)	0.26 (0.05, 1.35)	0.83 (0.34, 2.01)	0.93 (0.41, 2.10)	1.92* (1.08, 3.42)	1.23 (0.79, 1.91)	0.43 (0.17, 1.09)
Secondary+	1.58 (0.72, 3.49)	0.82 (0.46, 1.45)	0.69 (0.12, 3.98)	0.59 (0.16, 2.24)	0.76 (0.28, 2.05)	2.23** (1.23, 4.03)	0.87 (0.42, 1.83)	0.73 (0.22, 2.46)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.54 (0.88, 2.71)	0.85 (0.51, 1.40)	0.57 (0.17, 1.97)	0.46 (0.17, 1.27)	1.67 (0.62, 4.48)	3.16** (1.72, 5.83)	1.45 (0.66, 3.17)	0.70 (0.22, 2.22)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.97 (0.54, 1.73)	1.11 (0.54, 2.27)	2.75 (0.48, 15.81)	1.21 (0.61, 2.41)	1.25 (0.70, 2.24)	1.02 (0.66, 1.56)	1.71 (0.81, 3.60)	0.53 (0.23, 1.25)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	1.06 (0.50, 2.24)	1.05 (0.55, 2.00)	2.34 (0.60, 9.10)	1.50 (0.52, 4.27)	1.65 (0.67, 4.08)	1.28 (0.78, 2.12)	0.57* (0.35, 0.94)	0.50 (0.15, 1.62)
Middle	1.15 (0.60, 2.21)	1.26 (0.62, 2.54)	2.21 (0.37, 13.28)	4.12** (1.42, 11.92)	0.96 (0.40, 2.28)	1.61 (0.91, 2.85)	0.63 (0.32, 1.21)	0.69 (0.21, 2.25)
Rich	1.27 (0.57, 2.83)	2.08 (0.99, 4.35)	7.07 (0.95, 52.36)	1.17 (0.41, 3.38)	1.97 (0.83, 4.69)	4.29** (2.13, 8.65)	0.83 (0.45, 1.54)	0.60 (0.13, 2.71)
Richest	1.94 (0.83, 4.54)	1.42 (0.56, 3.60)	4.08 (0.24, 70.56)	8.21 (0.96, 70.49)	6.11** (1.71, 21.81)	5.77** (2.14, 15.53)	1.51 (0.66, 3.44)	0.25 (0.04, 1.72)
Gender of Youngest Child (0–23 Months)								
Male	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Female	0.80 (0.39, 1.61)	0.82 (0.54, 1.25)	0.43 (0.16, 1.21)	0.66 (0.34, 1.28)	0.88 (0.55, 1.41)	1.04 (0.70, 1.54)	0.75 (0.52, 1.08)	0.69 (0.35, 1.34)
Household Decision-Making Authority								
High	1.61* (1.06, 2.45)	1.17 (0.74, 1.86)	0.50 (0.17, 1.47)	0.70 (0.15, 3.23)	0.82 (0.46, 1.45)	1.11 (0.66, 1.89)	1.39 (0.96, 2.01)	1.28 (0.59, 2.78)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref

Table C.8—Model 2: Multivariate Logistic Regression for Treatment for ARI *continued*

	DRC OR 95%CI	Egypt OR 95%CI	Ghana OR 95%CI	Liberia OR 95%CI	Mali OR 95%CI	Nigeria OR 95%CI	Uganda OR 95%CI	Zambia OR 95%CI
Financial Decision Making								
Husband/Other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Alone/Jointly	N/A	0.80 (0.48, 1.34)	0.36 (0.13, 1.03)	1.64 (0.70, 3.85)	N/A	1.12 (0.68, 1.85)	1.32 (0.85, 2.03)	1.56 (0.81, 3.00)
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never Acceptable	1.02 (0.59, 1.75)	1.07 (0.70, 1.65)	1.65 (0.56, 4.88)	0.75 (0.35, 1.57)	0.79 (0.40, 1.56)	1.17 (0.78, 1.75)	1.58 (0.96, 2.58)	0.67 (0.33, 1.36)
Wife Has Right To Refuse Sex								
Yes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
No	1.43 (0.85, 2.39)	n/a	0.52 (0.17, 1.57)	0.61 (0.27, 1.38)	1.27 (0.55, 2.97)	1.14 (0.78, 1.68)	0.77 (0.51, 1.16)	0.51* (0.26, 0.98)

Appendix D

Table D.1—Model 1: Multivariate Logistic Regression for Nigeria Sample of Women Stratified by Religion

	Christian-Low BMI OR 95%CI	Muslim-Low BMI OR 95%CI	Christian-Facility Delivery OR 95%CI	Muslim-Facility Delivery OR 95%CI	Christian-Fully Immunized Child OR 95%CI	Muslim-Fully Immunized Child OR 95%CI	Christian-Treatment for ARI OR 95%CI	Muslim-Treatment for ARI OR 95%CI
Age								
15–19	0.57 (0.25, 1.32)	1.25 (0.94, 1.66)	0.61* (0.39, 0.95)	0.52** (0.36, 0.74)	0.38* (0.16, 0.90)	0.30* (0.11, 0.81)	0.21* (0.06, 0.82)	0.53 (0.17, 1.64)
20–24	1.03 (0.68, 1.56)	1.14 (0.93, 1.39)	0.76** (0.62, 0.93)	0.45** (0.36, 0.57)	0.77 (0.55, 1.06)	0.80 (0.53, 1.22)	0.48 (0.23, 1.02)	1.31 (0.61, 2.82)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.73 (0.53, 1.01)	0.84* (0.71, 1.00)	1.31** (1.11, 1.53)	1.25* (1.05, 1.49)	1.09 (0.82, 1.43)	1.04 (0.69, 1.57)	0.40* (0.17, 0.96)	0.89 (0.42, 1.88)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.87 (0.59, 1.29)	1.99 (0.80, 1.23)	0.81* (0.66, 0.99)	0.46** (0.36, 0.59)	0.91 (0.66, 1.26)	0.87 (0.55, 1.38)	0.72 (0.28, 1.85)	0.95 (0.42, 2.18)
4+	1.02 (0.65, 1.60)	1.14 (0.89, 1.47)	0.64** (0.51, 0.82)	0.23** (0.17, 0.31)	0.73 (0.52, 1.04)	0.79 (0.45, 1.36)	0.56 (0.19, 1.66)	1.02 (0.41, 2.58)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.08 (0.74, 1.58)	0.84 (0.68, 1.05)	1.92** (1.52, 2.41)	2.53** (2.01, 3.19)	1.28 (0.87, 1.89)	1.70* (1.13, 2.57)	1.70 (0.63, 4.56)	1.75 (0.76, 4.03)
Secondary+	1.03 (0.69, 1.53)	0.82 (0.60, 1.14)	3.59** (2.78, 4.65)	4.63** (3.47, 6.18)	1.81** (1.21, 2.70)	3.43** (2.24, 5.26)	1.83 (0.71, 4.74)	2.88 (0.89, 9.26)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.03 (0.70, 1.51)	0.94 (0.74, 1.20)	0.60** (0.47, 0.76)	0.82 (0.60, 1.12)	0.84 (0.62, 1.15)	0.85 (0.59, 1.22)	2.40 (0.87, 6.60)	4.65** (2.03, 10.65)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.82 (0.60, 1.14)	0.97 (0.84, 1.11)	1.30** (1.09, 1.54)	1.91** (1.55, 2.34)	1.31* (1.00, 1.71)	1.29 (0.92, 1.81)	1.13 (0.45, 2.83)	0.97 (0.60, 1.56)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	0.85 (0.57, 1.26)	0.77** (0.66, 0.90)	1.47** (1.10, 1.97)	2.27** (1.54, 3.33)	2.00** (1.34, 2.99)	2.64** (1.42, 4.92)	0.71 (0.30, 1.73)	1.65 (0.91, 2.98)
Middle	0.72 (0.48, 1.07)	0.57** (0.45, 0.71)	2.51** (1.83, 3.46)	4.89** (3.15, 7.59)	2.11** (1.36, 3.28)	6.79** (3.55, 12.96)	1.47 (0.56, 3.83)	1.57 (0.73, 3.37)
Rich	0.65 (0.42, 1.02)	0.53** (0.40, 0.71)	4.42** (3.19, 6.12)	11.84** (7.43, 18.85)	3.18** (2.03, 4.99)	10.56** (5.54, 20.12)	3.87* (1.22, 12.34)	5.76** (2.10, 15.78)
Richest	0.46** (0.26, 0.82)	0.34** (0.21, 0.57)	10.22** (7.06, 14.78)	24.82** (15.01, 41.04)	4.86** (2.98, 7.93)	13.43** (6.58, 27.41)	3.39 (0.76, 15.11)	7.38** (1.73, 31.57)

Table D.2—Model 2: Multivariate Logistic Regression for Nigeria Sample of Women Stratified by Religion

	Christian-Low BMI OR 95%CI	Muslim-Low BMI OR 95%CI	Christian-Facility Delivery OR 95%CI	Muslim-Facility Delivery OR 95%CI	Christian-Fully Immunized Child OR 95%CI	Muslim-Fully Immunized Child OR 95%CI	Christian-Treatment for ARI OR 95%CI	Muslim-Treatment for ARI OR 95%CI
Age								
15–19	0.56 (0.23, 1.33)	1.28 (0.96, 1.70)	0.65 (0.43, 1.01)	0.57** (0.40, 0.81)	0.42 (0.18, 1.01)	0.31* (0.11, 0.85)	0.23* (0.06, 0.92)	0.47 (0.14, 1.57)
20–24	0.94 (0.61, 1.44)	1.16 (0.94, 1.43)	0.80* (0.65, 0.97)	0.46** (0.36, 0.58)	0.79 (0.57, 1.10)	0.95 (0.62, 1.44)	0.53 (0.25, 1.13)	1.27 (0.57, 2.84)
25–34	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
35+	0.74 (0.53, 1.04)	0.83* (0.70, 0.98)	1.25** (1.06, 1.47)	1.17 (0.98, 1.40)	1.05 (0.80, 1.40)	0.98 (0.64, 1.49)	0.39* (0.15, 0.96)	0.83 (0.38, 1.84)
Parity								
1	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2–3	0.92 (0.61, 1.39)	1.01 (0.81, 1.26)	0.82 (0.66, 1.01)	0.45** (0.35, 0.58)	0.91 (0.66, 1.26)	0.86 (0.54, 1.37)	0.62 (0.22, 1.74)	1.00 (0.43, 2.37)
4+	1.08 (0.67, 1.74)	1.17 (0.90, 1.51)	0.68** (0.53, 0.87)	0.24** (0.18, 0.32)	0.72 (0.51, 1.03)	0.89 (0.50, 1.57)	0.57 (0.19, 1.74)	1.00 (0.38, 2.61)
Education								
None	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Primary	1.09 (0.74, 1.59)	0.84 (0.68, 1.05)	1.88** (1.49, 2.38)	2.22** (1.78, 2.77)	1.27 (0.86, 1.89)	1.67** (1.10, 2.54)	1.80 (0.63, 5.09)	1.67 (0.71, 3.93)
Secondary+	1.12 (0.73, 1.70)	0.85 (0.61, 1.18)	3.57** (2.75, 4.64)	3.93** (2.96, 5.23)	1.74** (1.16, 2.61)	2.59** (1.64, 4.08)	1.96 (0.73, 5.26)	2.21 (0.63, 7.74)
Residence								
Urban	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.95 (0.65, 1.40)	0.92 (0.73, 1.17)	0.59** (0.46, 0.76)	0.79 (0.59, 1.07)	0.87 (0.64, 1.20)	0.88 (0.61, 1.28)	2.74 (0.96, 7.78)	4.48** (1.83, 10.96)
Working								
No	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Yes	0.81 (0.58, 1.14)	1.01 (0.88, 1.16)	1.29** (1.08, 1.54)	1.79** (1.45, 2.20)	1.24 (0.94, 1.63)	1.17 (0.83, 1.65)	1.31 (0.53, 3.22)	1.03 (0.62, 1.69)
Wealth Index								
Poorest	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Poor	0.92 (0.61, 1.40)	0.78** (0.66, 0.92)	1.44* (1.07, 1.94)	2.29** (1.57, 3.37)	2.06** (1.35, 3.13)	2.61** (1.39, 4.91)	0.59 (0.22, 1.57)	1.89** (1.03, 3.46)
Middle	0.75 (0.49, 1.16)	0.58** (0.46, 0.73)	2.38** (1.73, 3.29)	4.48** (2.91, 6.90)	2.10** (1.34, 3.30)	5.97** (3.11, 11.46)	1.30 (0.47, 3.62)	1.79 (0.82, 3.91)
Rich	0.65 (0.40, 1.05)	0.57** (0.43, 0.75)	4.26** (3.06, 5.93)	10.39** (6.54, 16.47)	3.34** (2.10, 5.32)	8.56** (4.41, 16.61)	3.82* (1.14, 12.80)	5.81** (2.00, 16.82)
Richest	0.50* (0.27, 0.91)	0.37** (0.22, 0.61)	9.48** (6.50, 13.82)	22.39** (13.50, 37.14)	4.81** (2.90, 7.96)	11.18** (5.39, 22.21)	3.96 (0.89, 17.66)	9.28** (2.00, 43.09)
Household Decision-Making Authority								
High	0.89 (0.66, 1.21)	0.66** (0.51, 0.86)	1.06 (0.90, 1.24)	2.54** (2.02, 3.19)	1.39* (1.08, 1.78)	1.78* (1.13, 2.80)	1.21 (0.61, 2.42)	0.89 (0.34, 2.30)
Low	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Financial Decision Making								
Husband/Other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Alone/Jointly	0.77 (0.56, 1.06)	1.31* (1.00, 1.71)	1.09 (0.94, 1.27)	0.78 (0.61, 1.00)	0.96 (0.74, 1.23)	1.18 (0.76, 1.85)	1.31 (0.68, 2.53)	1.03 (0.45, 2.37)

Table D.2—Model 2: Multivariate Logistic Regression for Nigeria Sample of Women Stratified by Religion *continued*

	Christian-Low BMI OR 95%CI	Muslim-Low BMI OR 95%CI	Christian-Facility Delivery OR 95%CI	Muslim-Facility Delivery OR 95%CI	Christian-Fully Immunized Child OR 95%CI	Muslim-Fully Immunized Child OR 95%CI	Christian-Treatment for ARI OR 95%CI	Muslim-Treatment for ARI OR 95%CI
Attitudes Towards Wife Beating								
Acceptable	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Never acceptable	0.77 (0.59, 1.02)	0.97 (0.83, 1.12)	1.20* (1.03, 1.39)	1.04 (0.87, 1.24)	1.18 (0.94, 1.50)	1.61** (1.18, 2.18)	0.95 (0.51, 1.79)	1.42 (0.83, 2.44)
Wife Has Right To Refuse Sex								
Yes	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
No	1.37* (1.05, 1.78)	0.98 (0.83, 1.16)	0.80** (0.70, 0.92)	0.83* (0.71, 0.98)	0.98 (0.79, 1.22)	0.65* (0.46, 0.93)	0.73 (0.38, 1.40)	1.72* (1.04, 2.86)

MEASURE Evaluation
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