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# COMPARATIVE ANALYSIS OF A PROXY MEASUREMENT OF VAGINAL FISTULA

## SUPPLEMENT TO DHS ANALYTICAL STUDIES 17



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# **Comparative Analysis of a Proxy Measurement of Vaginal Fistula**

## **Supplement to DHS Analytical Studies No. 17**

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# 1. Introduction

## 1.1 Background

DHS Analytical Studies No. 17 (Johnson and Peterman, 2008) presented findings on the prevalence of self-reported symptoms of gynecological (vesico-vaginal and/or recto-vaginal) fistula and associations with various socioeconomic, health-related, and birth-related factors, among eight countries with data on fistula collected through The DHS Program. The report also examined data collection methodology. This supplement to the report provides an update to data collection methods and presents similar prevalence and covariate information for an additional 13 countries and 17 DHS surveys that have asked questions on this topic since the original report was published in 2008.

Gynecological fistula is relatively rare among maternal morbidities, occurring approximately once or twice per 1,000 deliveries, and in developing countries is typically caused by prolonged, obstructed labor (Baloch et al., 2014; Hilton, 2003). Other causes of fistula include trauma, injury, genital cutting, or sexual violence (ACQUIRE, 2006; Hilton, 2003; Nordland, 2007; Wall et al., 2002). Women living with fistula suffer from a disability that not only prevents them from having a normal life physically but also consigns many to a lifetime of social and economic disability, if the injury is not repaired. Women with fistula are often ostracized from their homes and communities, and this social exclusion can lead to extreme psychological distress and even suicide (Baloch et al., 2014; Wall et al., 2002).

## 1.2 Data

This analysis uses data from 25 surveys in 21 countries that have posed questions on fistula symptoms or incontinence of urine and/or feces, including the eight surveys presented in DHS Analytic Studies No. 17. Across these surveys, there is some variance in the phrasing of the questions, and also in the sub-sample of women who were asked the questions, which can be seen in Table 1.1. Pakistan (2006-07) asked fistula-related questions only to women who have ever had a live birth, while Rwanda (2005) asked the questions to women who gave birth in the last five years. Democratic Republic of the Congo (DRC) (2007), Ethiopia (2005), Mali (2006), Niger (2006), and Niger (2012) only asked fistula-related questions to women who have ever heard of fistula.



### **1.3 Methods**

An initial search of all DHS surveys was conducted using The DHS Program website (dhsprogram.com). This search produced a list of 26 surveys released as of December 2014 that included questions on fistula. Data from the Equatorial Guinea 2011 DHS were excluded from analysis due to lack of appropriate UNFPA permissions. Corresponding DHS Final Reports from the remaining 25 surveys were reviewed and matched to variables in the datasets to ensure that all pertinent questions regarding fistula were taken into consideration for calculation of fistula prevalence. One variable for “ever had fistula” for each woman in each dataset was created for this analysis, in order to calculate lifetime prevalence. Where possible, the author attempted to match the methodology to the 2008 report to keep the results consistent. This entailed excluding women who were not asked the question at all, and also excluding women who responded that they did not know if they had fistula. In other words, the sample for each country was limited only to those women who reported a definitive yes or no in response to a question about having symptoms of fistula.

Where applicable, all calculations and denominators are weighted samples of women who were asked about having symptoms of fistula. For the indicator on sexual violence, the domestic violence weight was applied where applicable.

All analyses were performed using the Stata statistical software version 13.0.

## **2. National Contexts**

### **2.1. Related Development Indicators**

To frame the maternal health, gender equity, and poverty context in which fistula occurs, Table 2.1 presents summary data on maternal health and welfare indicators for the countries that have collected data on fistula symptoms.

The represented countries vary greatly in maternal health indicators. The maternal mortality ratio ranges from 172 deaths per 100,000 live births in Comoros (2012) to 1165 in Sierra Leone (2013). The percentage of births in the past 5 years with skilled attendance ranges from 6 percent in Ethiopia (2005) to 94 percent in Congo Brazzaville (2011-12). Births in the past 5 years delivered by caesarian section range from 1 percent in Ethiopia and Niger (2006) to 10 percent in Comoros.

Several indicators of gender equity are included to give additional context to fistula prevalence in the selected countries. The ratio of literate women to men ranges from 0.42 in Niger to 1.10 in Congo Brazzaville. Female life expectancy at birth ranges from 45 in Sierra Leone to 66 in Pakistan. This supplement excludes data on the Gender-related Development Index (GDI), which was included in DHS Analytic Studies No. 17, because in 2010 the calculation of the GDI changed, rendering this indicator less than ideal for comparing trends in disparities by gender. In lieu of the GDI, two other indicators of gender equity are added to this supplement. The first is early marriage, defined as the percentage of married women age 20-24 who first married before age 18. The second is teenage motherhood, defined as the percentage of women age 15-19 who have had a live birth or are currently pregnant.

Gross National Income (GNI) is an indicator of economic development. Among the countries included here, the GNI ranges from 160 in Ethiopia to 2.480 in Congo Brazzaville.

**Table 2.1 Maternal Health and Welfare Indicators**

		Setting the context: Maternal health and welfare indicators in countries with data on fistula symptoms																								
		Benin 2011-12	Burkina Faso 2010	Ca- meroon 2011	Congo (Braz- zaville) 2011-12	DRC 2007	Côte d'Ivoire 2011-12	Ethiopia 2005	Guinea 2012	Haiti 2012	Kenya 2008-09	Malawi 2004	Malawi 2010	Mali 2006	Mali 2012-13	Niger 2006	Niger 2012	Nigeria 2008	Pakistan 2006-07	Rwanda 2005	Senegal 2010-11	Sierra Leone 2013	Tan- zania 2010	Uganda 2006	Uganda 2011	
<b>Maternal health</b>																										
Maternal mortality ratio (per 100,000 live births)		na	341	782	172	426	549	614	673	724	na	488	984	675	464	368	648	535	545	276	750	392	1165	454	435	438
Percentage of births in the past 5 years with skilled attendance		84.1	67.1	63.6	82.2	94	74	59.4	5.7	39.3	37.3	43.8	57	71.4	49	58.6	32.9	29.3	38.9	38.8	38.6	65.1	59.6	47.6	42.1	58
Percentage of births in the last 5 years delivered by caesarean section		5.4	1.9	3.8	9.6	5.8	4	2.7	1	2.4	5.5	6.2	3.1	4.6	1.6	2.7	1	1.4	1.8	7.3	2.9	5.9	2.9	4.5	3.1	5.3
Total fertility rate (TFR)		4.9	6	5	4.3	5.1	6.3	5	5.4	5.1	3.5	4.6	6	5.7	6.6	6.1	7	7.6	5.7	4.1	6.1	5	4.9	5.4	6.7	6.2
Median age at first birth (ages 24-49)		20.7	19.5	19.5	23	19.6	20	19.6	19	18.8	22.3	19.8	19	18.9	18.9	19.6	18.2	18.6	20.4	21.8	22	21	19.4	19.5	18.6	18.7
<b>Gender equality</b>																										
Ratio of literate women to men (ages 15-24)		0.71	0.70	0.95	0.96	1.10	0.75	0.66	0.62	0.55	1.02	0.97	0.86	0.95	0.54	0.61	0.42	0.42	0.78	na	0.96	0.74	0.81	0.93	0.83	0.98
Female life expectancy at birth (years) <sup>1</sup>		59	55	54	61	58	48	50	57	56	63	59	48	53	52	55	55	58	50	66	55	63	45	59	54	58
Percentage of women age 20-24 first married by 18		31.9	51.6	38.4	31.6	32.6	39.1	33.2	49.2	51.7	17.5	26.4	48.9	49.6	70.6	59.6	74.5	76.3	39.4	24.0	13.3	32.9	38.9	36.9	46.3	39.7
Percentage of adolescents who have given birth or are currently pregnant		16.5	23.6	25.2	11.3	32.9	23.8	29.6	16.6	34.3	14.2	17.7	34.1	25.6	35.5	39.3	39.3	40.4	22.9	56.7	4.1	18.7	27.9	22.8	24.9	23.8
<b>Poverty</b>																										
Per-capita gross national income (GNI) <sup>2</sup>		750	600	1,200	820	2,480	260	1,340	160	440	760	920	220	350	470	670	270	390	1,160	890	260	1,030	660	530	330	460

Notes: Unless otherwise indicated, all values are taken from the DHS. Values are representative of the adults in age group 15-49. Where indicators are from external sites, the most recent year for surveys spanning two years is used.

na= not available

<sup>1</sup> World Bank

<sup>2</sup> World Bank, Atlas method, purchasing power parity

## 2.2. Estimated Levels of Symptoms of Fistula

Table 2.2 shows estimated lifetime prevalence of fistula symptoms, the percentage of respondents who reported ever having experienced constant urinary and/or fecal incontinence. Not all of the prevalence rates among countries are comparable. Somewhat different sub-samples are used in DRC (2007), Ethiopia (2005), Mali (2006), Niger (2006 and 2012), Pakistan (2006-07), and Rwanda (2005). Additionally, the wording of the question is different in some surveys. Even after the module for data collection on fistula was created in 2006, some countries did not adopt it, including DRC (2007), Côte d'Ivoire (2011), Haiti (2012), Niger (2012), and Uganda (2011). The module includes a question asking all women interviewed, "Sometimes a woman can have a problem of constant leakage of urine or stool from her vagina during the day and night. This problem usually occurs after a difficult childbirth, but may also occur after a sexual assault or after pelvic surgery. Have you ever experienced a constant leakage of urine or stool from your vagina during the day and night?" It is worth noting that in the Malawi (2004), Rwanda (2005), Mali (2006), Uganda (2006), Niger (2006 and 2012), and Cote d'Ivoire (2011-12) surveys, women were asked either if they experienced fistula ('maladie de l'urine' in French) or if they experienced leakage of urine or stool from their vagina without specifying "constant", "continuous", or "during the day and night" as the other surveys did. This omission could lead to an overestimation of fistula by including women who suffer from other maternal morbidities causing incontinence that are not fistula. One example of how the wording of the question may impact the findings is in Malawi. The Malawi 2004 DHS asked each woman who had a live birth in the last five years if, after her most recent birth, she experienced uncontrollable leakage of urine or stool from her vagina. If she did not or was not asked this question, she was asked separately if she had ever experienced uncontrollable leakage of urine or stool from her vagina. The results from this survey showed 4.7 percent of women reporting symptoms of fistula. In the 2010 survey, however, Malawi adopted the standard fistula module and asked all women about their experience with constant leakage during the day and night. The 2010 data showed 0.6 percent of women reported symptoms of fistula. The abrupt decline was probably the result of more specific wording of the question in 2010 than in 2004.

Of the surveys that used the standard fistula module with all eligible women, prevalence is lowest in Burkina Faso (2010) at just 0.1 percent and highest in Comoros (2012) at 1.5 percent. With the exception of Benin (2011-12) and Burkina Faso (2010), fistula prevalence is higher among women who have ever had a live birth than among women who have never had a live birth.

**Table 2.2 Fistula Symptoms**

	Estimated lifetime prevalence of fistula symptoms among selected samples of women in countries with data on fistula symptoms														
	Benin 2011-12	Burkina Faso 2010	Cameroon 2011	Comoros 2012	Congo (Braz- zaville) 2011-12	DRC 2007	Cote d'Ivoire 2011-12	Ethiopia 2005	Guinea 2012	Haiti 2012	Kenya 2008-09	Malawi 2004	Malawi 2010	Mali 2006	Mali 2012-13
Exact Sample Size	16,599	17,062	15,419	5,323	10,818	795	9,989	3,907	9,136	14,284	8,436	11,698	23,020	2,146	10,424
Full sample	0.7 (16,599)	0.1 (17,067)	0.4 (15,418)	1.5 (5,322)	0.3 (10,819)	--	3.6 (9,986)	--	0.6 (9,136)	0.9 (14,282)	1.0 (8,435)	4.7 (11,698)	0.6 (23,012)	--	0.6 (10,424)
Ever had a live birth (n)	0.7 (12,375)	0.1 (13,259)	0.5 (10,896)	2.0 (2,933)	0.3 (8,286)	--	4.1 (7,342)	--	0.8 (6,924)	0.9 (8,567)	1.3 (6,115)	5.8 (9,261)	0.7 (17,984)	--	0.7 (8,553)
Never had a live birth (n)	0.8 (4,224)	0.1 (3,808)	0.2 (4,521)	0.9 (2,389)	0.1 (2,533)	--	2.4 (2,644)	--	0.2 (2,212)	0.4 (5,715)	0.2 (2,320)	0.4 (2,437)	0.1 (5,028)	--	0.1 (1,871)
Gave birth in last 5 years (n)	0.7 (8,993)	0.1 (10,480)	0.5 (7,642)	1.8 (2,057)	0.2 (5,882)	--	4.0 (5,223)	--	0.7 (4,989)	0.8 (5,216)	1.4 (3,967)	6.0 (7,271)	0.7 (13,658)	--	0.6 (6,773)
With knowledge of fistula (n)	--	--	--	--	--	3.4 (800)	--	3.4 (3,262)	--	--	--	--	--	1.0 (2,384)	--
With knowledge and ever had a live birth (n)	--	--	--	--	--	3.4 (680)	--	4.7 (2,138)	--	--	--	--	--	1.1 (1,999)	--
With knowledge and birth in last 5 years (n)	--	--	--	--	--	4.0 (464)	--	5.1 (1,411)	--	--	--	--	--	1.1 (1,400)	--

  

	Niger 2006	Niger 2012	Nigeria 2008	Pakistan 2006-07	Rwanda 2005	Senegal 2010-11	Sierra Leone 2013	Tanzania 2010	Uganda 2006	Uganda 2011
Exact Sample Size	3,863	5,205	33,317	8,798	5,386	15,688	16,543	10,136	8,476	8,606
Full sample	--	--	0.4 (33,316)	4.6 (8,800)	3.3 (5,420)	0.1 (15,688)	0.7 (16,540)	0.6 (10,134)	2.7 (8,478)	2.0 (8,625)
Ever had a live birth (n)	--	--	0.5 (23,348)	4.6 (8,800)	3.3 (5,420)	0.2 (10,233)	0.9 (12,403)	0.7 (10,223)	3.4 (6,444)	2.4 (6,436)
Never had a live birth (n)	--	--	0.2 (9,968)	na	na	0.0 (5,465)	0.2 (4,137)	0.4 (2,547)	0.3 (2,034)	0.8 (2,189)
Gave birth in last 5 years (n)	--	--	0.4 (17,594)	5.5 (5,677)	3.3 (5,420)	0.2 (7,690)	0.9 (8,593)	0.6 (5,513)	3.5 (5,025)	2.2 (4,952)
With knowledge of fistula (n)	0.7 (3,482)	0.4 (4,918)	1.3 (325)	--	--	--	--	--	--	--
With knowledge and ever had a live birth (n)	0.7 (2,979)	0.5 (4,281)	1.0 (271)	--	--	--	--	--	--	--
With knowledge and birth in last 5 years (n)	--	--	--	--	--	4.0 (464)	--	5.1 (1,411)	--	--

Note: weighted cases in parentheses

### **3. Results of Bivariate Analysis**

Chi square tests of independence were conducted to test for bivariate associations between presence of self-reported symptoms of fistula and related indicators of interest. Tables 3.1, 3.2 and 3.3 show the point estimates, confidence intervals, and the p-values of women reporting symptoms of fistula among socioeconomic, selected health conditions, and childbirth indicators, respectively. When interpreting these tables, it is important to note the overall low percentage of women reporting symptoms of fistula and the relatively wide confidence intervals that result from these low frequencies.

Overall, no single predictor was associated with having symptoms of fistula across a majority of countries. In Table 3.1, there is no clear pattern of significant differences between symptoms of fistula and any socio-demographic characteristics, except for access to health care. Women in 10 of the 25 surveys were significantly more likely to report having symptoms of fistula if they reported having limited access as opposed to sufficient access.

Table 3.1 Fistula Symptoms and Socioeconomic Characteristics

Characteristics		Benin 2011-12		Burkina Faso 2010		Cameroun 2011		Comoros 2012		Congo (Brazzaville) 2011-12		Cote d'Ivoire 2011-12		
		%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	
Weighted Sample Size		16,599	17,067	15,418	5,322	10,819	800	9,986						
Percentage of women reporting fistula symptoms in 25 DHS surveys, according to age group and socioeconomic characteristics, bivariate associations														
<b>Age (in years)</b>														
15-19	0.7	[0.416,1.243]	0.759	0.0	[0.010,0.224]	0.203	0.230	0.8	[0.415,1.570]	0.195	0.150	0.285	2.0	[1.371,2.932]
20-24	0.6	[0.343,1.055]	0.1	[0.030,0.321]	0.3	[0.149,0.696]	1.4	[0.786,2.417]	0.2	[0.040,0.705]	3.1	[1.344,6.965]	3.8	[2.771,5.243]
25-29	1.0	[0.621,1.542]	0.0	[0.004,0.193]	0.5	[0.253,0.892]	1.6	[0.742,3.509]	0.6	[0.249,1.339]	3.3	[1.144,9.140]	3.4	[2.491,4.703]
30-34	0.7	[0.409,1.161]	0.2	[0.059,0.483]	0.5	[0.214,0.999]	1.6	[0.847,3.055]	0.2	[0.111,0.518]	7.9	[2.399,23.029]	4.8	[3.547,6.343]
35-39	0.7	[0.404,1.214]	0.2	[0.074,0.553]	0.7	[0.336,1.285]	1.7	[0.925,3.262]	0.2	[0.041,1.141]	1.8	[0.409,7.632]	4.6	[3.214,6.571]
40-44	0.6	[0.326,1.190]	0.3	[0.097,0.864]	0.7	[0.343,1.457]	3.0	[1.582,5.463]	0.2	[0.022,1.122]	2.2	[0.968,4.818]	2.7	[1.832,4.005]
45-49	0.7	[0.364,1.408]	0.1	[0.013,0.681]	0.4	[0.180,1.107]	1.7	[0.763,3.594]	0.4	[0.095,2.023]	1.8	[0.585,5.437]	5.2	[3.378,8.047]
<b>Formal education</b>														
None	0.7	[0.522,0.961]	0.896	0.1	[0.053,0.168]	0.002	0.315	1.6	[0.989,2.619]	0.614	0.769	0.595	3.5	[2.907,4.322]
Primary only	0.7	[0.397,1.323]	0.0	na	0.5	[0.296,0.709]	1.8	[1.065,2.954]	0.3	[0.139,0.693]	3.0	[1.266,6.761]	3.5	[2.691,4.667]
Secondary and above	0.8	[0.487,1.314]	0.4	[0.164,0.896]	0.5	[0.293,0.718]	1.3	[0.841,1.988]	0.2	[0.118,0.509]	4.2	[2.198,7.777]	3.9	[2.984,4.979]
<b>Marital status</b>														
Never in union	1.0	[0.601,1.528]	0.190	0.1	[0.051,0.393]	0.862	0.363	1.8	[0.472,1.519]	0.140	0.093	0.428	2.5	[1.872,3.417]
Currently in union	0.6	[0.487,0.841]	0.1	[0.066,0.200]	0.4	[0.301,0.590]	0.8	[1.294,2.469]	0.3	[0.153,0.608]	3.6	[2.111,6.085]	4.0	[3.338,4.686]
Separated/divorced	1.1	[0.480,2.454]	0.1	[0.016,0.825]	0.6	[0.238,1.565]	2.4	[0.927,5.877]	0.3	[0.072,0.974]	4.1	[1.585,10.344]	5.4	[3.302,8.587]
Widowed	0.6	[0.140,2.280]	0.0	na	0.9	[0.258,2.794]	(0,0)	(na)	1.2	[0.166,8.090]	*	4.7	[2.354,9.231]	
<b>Wealth quintile</b>														
Poorest	0.5	[0.275,0.930]	0.319	0.1	[0.014,0.229]	0.048	0.024	1.9	[1.042,3.425]	0.489	0.935	0.079	3.8	[2.797,5.085]
Second	0.7	[0.360,1.205]	0.0	[0.006,0.124]	0.3	[0.145,0.558]	2.1	[1.182,3.532]	0.3	[0.090,1.255]	1.0	[0.318,2.900]	3.4	[2.114,5.580]
Middle	0.5	[0.309,0.887]	0.1	[0.039,0.307]	0.3	[0.135,0.650]	1.5	[0.841,2.518]	0.3	[0.097,0.846]	4.2	[1.677,10.329]	3.2	[2.411,4.281]
Fourth	0.9	[0.592,1.399]	0.1	[0.034,0.294]	0.8	[0.457,1.272]	1.1	[0.607,2.006]	0.2	[0.039,0.721]	6.5	[3.021,13.596]	3.8	[2.804,5.129]
Wealthiest	0.9	[0.536,1.661]	0.2	[0.113,0.532]	0.4	[0.236,0.771]	1.1	[0.515,2.507]	0.2	[0.059,0.842]	2.2	[0.877,5.288]	3.8	[2.866,4.930]
<b>Place of residence</b>														
Urban	1.0	[0.666,1.412]	0.020	0.2	[0.082,0.419]	0.173	0.042	2.4	[1.595,3.462]	0.004	0.819	0.529	3.7	[2.994,4.569]
Rural	0.5	[0.365,0.758]	0.1	[0.049,0.174]	0.3	[0.179,0.446]	1.1	[0.744,1.578]	0.2	[0.142,0.399]	3.0	[1.596,5.526]	3.5	[2.867,4.322]
<b>Health care access<sup>1</sup></b>														
Sufficient access	0.5	[0.334,0.851]	0.054	0.1	[0.026,0.348]	0.723	0.749	1.7	[1.000,2.911]	0.558	0.227	0.050	4.1	[3.176,5.390]
Limited access	0.8	[0.625,1.085]	0.1	[0.072,0.211]	0.4	[0.263,0.725]	1.4	[1.084,1.931]	0.2	[0.099,0.419]	4.0	[2.503,6.325]	3.5	[2.916,4.108]
Full Sample	0.7	[0.558,0.960]	0.1	[0.071,0.194]	0.4	[0.304,0.554]	1.5	[1.142,1.980]	0.3	[0.149,0.441]	3.4	[2.139,5.216]	3.6	[3.117,4.188]

(Continued...)



Table 3.1 – (Continued)

Percentage of women reporting fistula symptoms in 25 DHS surveys, according to age group and socioeconomic characteristics, bivariate associations																						
	Ethiopia 2005			Guinea 2012			Haiti 2012			Kenya 2008-09			Malawi 2004			Malawi 2010			Mali 2006			
Weighted Sample Size	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	
<b>Characteristic</b>																						
<b>Age (in years)</b>			<b>0.030</b>			<b>0.027</b>			<b>0.188</b>			<b>0.006</b>			<b>0.000</b>			<b>0.070</b>			<b>0.526</b>	
15-19	2.1	[0.959,4.422]		0.2	[0.073,0.521]		0.3	[0.130,0.661]		0.3	[0.118,0.627]		2.0	[1.470,2.796]		0.3	[0.143,0.588]		0.2	[0.028,2.151]		
20-24	3.0	[1.450,6.104]		0.6	[0.322,1.246]		0.7	[0.390,1.222]		1.2	[0.668,2.106]		5.3	[4.406,6.382]		0.8	[0.493,1.160]		0.9	[0.245,3.004]		
25-29	2.1	[1.043,4.142]		1.0	[0.560,1.735]		0.8	[0.475,1.279]		0.5	[0.213,1.125]		5.5	[4.467,6.685]		0.6	[0.383,0.958]		0.7	[0.201,2.338]		
30-34	2.7	[1.280,5.507]		0.6	[0.244,1.281]		1.0	[0.569,1.645]		1.7	[0.693,4.318]		5.3	[4.090,6.885]		0.8	[0.537,1.313]		0.6	[0.125,2.490]		
35-39	4.3	[2.160,8.210]		0.6	[0.255,1.216]		0.8	[0.413,1.486]		1.0	[0.500,2.147]		5.5	[4.202,7.212]		0.4	[0.227,0.838]		2.0	[0.611,6.303]		
40-44	5.8	[3.321,10.037]		1.3	[0.630,2.777]		0.9	[0.392,1.970]		0.6	[0.237,1.716]		6.6	[4.921,8.796]		0.8	[0.493,1.445]		0.9	[0.257,3.250]		
45-49	7.2	[4.169,12.114]		0.6	[0.248,1.281]		0.9	[0.478,1.816]		2.5	[1.222,5.135]		3.7	[2.487,5.363]		0.5	[0.220,0.995]		1.6	[0.340,7.048]		
<b>Formal education</b>			<b>0.000</b>			<b>0.895</b>			<b>0.952</b>			<b>0.147</b>			<b>0.000</b>			<b>0.159</b>			<b>0.060</b>	
None	5.2	[3.849,7.079]		0.7	[0.460,0.968]		0.7	[0.434,1.199]		0.7	[0.301,1.703]		6.4	[5.296,7.599]		0.8	[0.492,1.172]		1.0	[0.500,1.864]		
Primary only	3.3	[2.082,5.333]		0.5	[0.234,1.272]		0.7	[0.421,1.055]		1.2	[0.800,1.799]		4.8	[4.256,5.412]		0.6	[0.485,0.782]		2.3	[0.853,5.858]		
Secondary and above	0.7	[0.338,1.563]		0.6	[0.312,1.217]		0.7	[0.471,1.055]		0.7	[0.420,1.257]		1.8	[1.160,2.786]		0.4	[0.206,0.691]		0.0	na		
<b>Marital status</b>			<b>0.000</b>			<b>0.074</b>			<b>0.014</b>			<b>0.000</b>			<b>0.000</b>			<b>0.000</b>			<b>0.795</b>	
Never in union	1.0	[0.443,2.148]		0.3	[0.123,0.670]		0.4	[0.248,0.663]		0.2	[0.087,0.534]		0.6	[0.340,1.114]		0.1	[0.027,0.197]		0.5	[0.052,4.256]		
Currently in union	3.9	[2.839,5.350]		0.7	[0.519,1.004]		0.8	[0.592,1.213]		1.3	[0.812,1.936]		5.6	[5.026,6.254]		0.8	[0.606,0.937]		1.0	[0.591,1.813]		
Separated/divorced	5.9	[2.819,11.764]		1.6	[0.435,5.507]		0.8	[0.413,1.537]		1.1	[0.482,2.300]		4.3	[3.211,5.825]		0.5	[0.291,0.883]		0.0	na		
Widowed	8.6	[4.486,15.872]		0.6	[0.080,4.073]		1.6	[0.598,4.136]		3.0	[1.166,7.539]		6.3	[3.932,9.890]		0.6	[0.206,1.636]		(0.0)	(na)		
<b>Wealth quintile</b>			<b>0.001</b>			<b>0.432</b>			<b>0.508</b>			<b>0.197</b>			<b>0.000</b>			<b>0.241</b>			<b>0.029</b>	
Poorest	6.6	[3.760,11.252]		0.9	[0.510,1.623]		0.8	[0.453,1.531]		0.7	[0.360,1.415]		5.8	[4.750,7.069]		0.8	[0.517,1.138]		2.8	[1.223,6.394]		
Second	4.8	[2.691,8.569]		0.6	[0.252,1.373]		0.7	[0.398,1.306]		1.6	[1.039,2.575]		6.2	[5.135,7.382]		0.6	[0.376,0.928]		1.1	[0.322,3.591]		
Middle	2.8	[1.182,6.382]		0.3	[0.134,0.718]		0.5	[0.269,0.900]		0.8	[0.350,1.757]		5.5	[4.460,6.665]		0.7	[0.422,1.033]		1.3	[0.325,4.922]		
Fourth	5.8	[3.540,9.329]		0.7	[0.381,1.340]		0.6	[0.323,0.939]		0.6	[0.280,1.365]		4.2	[3.364,5.116]		0.6	[0.415,1.007]		0.4	[0.084,1.697]		
Wealthiest	1.6	[1.035,2.407]		0.7	[0.370,1.241]		0.9	[0.506,1.494]		1.2	[0.575,2.439]		2.3	[1.712,3.170]		0.3	[0.185,0.637]		0.4	[0.125,1.236]		
<b>Place of residence</b>			<b>0.000</b>			<b>0.365</b>			<b>0.436</b>			<b>0.207</b>			<b>0.002</b>			<b>0.062</b>			<b>0.222</b>	
Urban	1.7	[1.114,2.597]		0.8	[0.459,1.283]		0.8	[0.518,1.169]		0.6	[0.271,1.441]		2.8	[1.953,4.086]		0.3	[0.172,0.658]		0.6	[0.173,1.851]		
Rural	4.5	[3.358,5.927]		0.6	[0.379,0.852]		0.6	[0.404,0.941]		1.1	[0.763,1.646]		5.1	[4.577,5.651]		0.6	[0.527,0.798]		1.3	[0.701,2.281]		
<b>Health care access<sup>1</sup></b>			<b>0.029</b>			<b>0.730</b>			<b>0.730</b>			<b>0.001</b>			<b>0.001</b>			<b>0.088</b>			<b>0.323</b>	
Sufficient access	1.4	[0.599,3.346]		na	na		0.6	[0.296,1.298]		na	na		3.0	[2.189,4.059]		0.4	[0.201,0.667]		0.7	[0.234,1.800]		
Limited access	3.7	[2.857,4.707]		na	na		0.7	[0.524,0.963]		na	na		5.1	[4.625,5.720]		0.6	[0.515,0.792]		1.2	[0.617,2.305]		
Full Sample	3.4	[2.670,4.344]		0.6	[0.465,0.882]		0.7	[0.517,0.930]		1.0	[0.700,1.414]		4.7	[4.225,5.196]		0.6	[0.484,0.720]		1.0	[0.542,1.673]		

(Continued...)

Table 3.1 – (Continued)

Percentage of women reporting fistula symptoms in 25 DHS surveys, according to age group and socioeconomic characteristics, bivariate associations																							
	Mali 2012-13			Niger 2006			Niger 2012			Nigeria 2008			Pakistan 2006-07			Rwanda 2005			Senegal 2010-11				
	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value		
Weighted Sample Size																							
		10,424			3,482			4,918			33,316			8,780			5,420				15,688		
Characteristic																							
<b>Age (in years)</b>			0.577			0.994			0.077			0.704			<b>0.008</b>							0.135	
15-19	0.2	[0.078,0.414]		0.4	[0.102,1.922]		0.3	[0.198,0.506]		4.6	[2.228,9.207]		1.6	[0.397,6.164]		0.0	na						
20-24	0.6	[0.349,1.173]	<b>0.023</b>	0.5	[0.173,1.633]		0.3	[0.163,0.464]		5.5	[4.046,7.303]		5.1	[3.766,6.993]		0.1	[0.016,0.359]						
25-29	0.8	[0.492,1.323]		1.3	[0.595,2.923]		0.4	[0.277,0.633]		4.9	[3.871,6.083]		3.7	[2.761,5.050]		0.2	[0.044,0.905]						
30-34	0.4	[0.168,0.877]		0.6	[0.089,3.346]		0.3	[0.081,1.395]		4.3	[3.275,5.656]		2.6	[1.641,4.191]		0.2	[0.061,0.370]						
35-39	0.5	[0.202,1.176]		0.7	[0.141,2.956]		0.3	[0.038,1.885]		4.8	[3.578,6.365]		2.5	[1.643,3.876]		0.4	[0.118,1.189]						
40-44	1.1	[0.549,2.241]		0.0	na		0.4	[0.217,0.690]		3.6	[2.585,5.104]		2.3	[1.383,3.897]		0.0	na						
45-49	1.1	[0.462,2.413]		0.5	[0.086,2.662]		0.4	[0.061,3.072]		4.4	[3.172,6.068]		1.8	[0.758,4.329]		0.1	[0.031,0.498]						
<b>Formal education</b>			0.519			0.086			0.246			0.110			0.369							<b>0.012</b>	
None	0.6	[0.464,0.900]		0.5	[0.300,0.929]		0.4	[0.301,0.539]		4.6	[3.965,5.391]		2.8	[2.006,3.884]		0.2	[0.090,0.376]						
Primary only	0.5	[0.240,0.998]		0.6	[0.148,2.707]		0.5	[0.363,0.756]		5.7	[4.242,7.533]		3.6	[2.925,4.438]		0.1	[0.017,0.167]						
Secondary and above	0.4	[0.125,1.435]		0.2	[0.027,1.394]		0.0	na		3.6	[2.642,4.930]		2.7	[1.312,5.486]		0.0	[0.002,0.127]						
<b>Marital status</b>			0.855			0.553			<b>0.002</b>			0.238			<b>0.001</b>							<b>0.038</b>	
Never in union	0.3	[0.070,0.913]		0.0	na		0.2	[0.139,0.382]		na	na		4.9	[2.839,8.418]		0.0	[0.073,0.280]						
Currently in union	0.6	[0.459,0.884]		0.7	[0.354,1.315]		0.4	[0.247,0.762]		4.7	[4.095,5.298]		3.0	[2.467,3.652]		0.1	[0.089,4.293]						
Separated/divorced	1.6	[0.385,6.154]		0.0	na		1.0	[0.475,1.985]		1.3	[0.255,6.422]		5.8	[3.889,8.441]		0.6	[0.047,2.381]						
Widowed	1.3	[0.307,5.157]		0.0	na		0.9	[0.377,1.921]		3.3	[1.476,7.285]		0.0	na		0.3	[0.047,2.381]						
<b>Wealth quintile</b>			0.464			<b>0.018</b>			0.443			0.465			0.978							0.446	
Poorest	0.8	[0.467,1.424]		0.7	[0.160,3.274]		0.5	[0.173,1.474]		4.6	[3.521,5.968]		3.1	[2.142,4.438]		0.2	[0.104,0.526]						
Second	0.6	[0.340,1.225]		1.1	[0.414,2.754]		1.1	[0.437,2.683]		4.7	[3.577,6.107]		3.4	[2.318,4.835]		0.1	[0.019,0.195]						
Middle	0.7	[0.390,1.217]		1.1	[0.328,3.538]		0.0	[0.005,0.276]		5.2	[3.986,6.740]		3.4	[2.358,4.859]		0.0	[0.010,0.160]						
Fourth	0.3	[0.124,0.556]		0.3	[0.047,1.550]		0.5	[0.147,1.380]		4.8	[3.711,6.220]		3.6	[2.401,5.260]		0.2	[0.039,0.692]						
Wealthiest	0.6	[0.225,1.632]		0.4	[0.156,1.193]		0.1	[0.031,0.696]		3.6	[2.703,4.868]		3.1	[1.965,4.761]		0.1	[0.021,0.655]						
<b>Place of residence</b>			0.361			<b>0.024</b>			0.222			0.911			0.107							0.706	
Urban	0.6	[0.254,1.545]		0.4	[0.156,1.192]		0.0	na		4.6	[3.787,5.622]		2.3	[1.418,3.650]		0.1	[0.049,0.382]						
Rural	0.6	[0.414,0.838]		0.8	[0.367,1.604]		0.6	[0.314,0.973]		4.6	[3.859,5.362]		3.5	[2.833,4.227]		0.1	[0.055,0.209]						
<b>Health care access<sup>1</sup></b>			<b>0.010</b>			<b>0.036</b>			<b>0.019</b>			<b>0.025</b>			<b>0.000</b>							<b>0.000</b>	
Sufficient access	0.4	[0.262,0.680]		0.2	[0.045,0.560]		0.1	[0.019,0.484]		na	na		2.0	[1.217,3.240]		0.0	[0.001,0.068]						
Limited access	0.7	[0.487,1.074]		0.8	[0.437,1.598]		0.5	[0.277,0.907]		na	na		3.6	[2.950,4.404]		0.2	[0.101,0.378]						
Full Sample	0.6	[0.422,0.850]		0.7	[0.354,1.213]		0.4	[0.217,0.669]		4.6	[4.025,5.195]		3.3	[2.735,3.967]		0.1	[0.064,0.232]						

(Continued...)

Table 3.1 – (Continued)

Characteristic	Sierra Leone 2013			Tanzania 2010			Uganda 2006			Uganda 2011		
	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value
<b>Weighted Sample Size</b>		16,540		10,134		8,478		8,606				
<b>Age (in years)</b>			0.083			0.409			0.000			0.032
15-19	0.4	[0.174,0.703]		0.4	[0.170,1.153]		0.7	[0.373,1.174]		1.0	[0.595,1.646]	
20-24	0.5	[0.290,0.974]		0.4	[0.172,1.031]		2.8	[1.910,4.053]		1.8	[1.158,2.771]	
25-29	1.0	[0.567,1.716]		0.5	[0.193,1.074]		3.3	[2.001,5.318]		1.8	[1.163,2.755]	
30-34	1.0	[0.573,1.587]		1.0	[0.499,1.901]		4.3	[3.134,5.798]		3.1	[2.031,4.668]	
35-39	0.8	[0.490,1.445]		0.9	[0.452,1.732]		2.9	[1.947,4.440]		2.5	[1.491,4.196]	
40-44	0.9	[0.452,1.793]		1.0	[0.421,2.568]		2.6	[1.602,4.264]		2.8	[1.704,4.432]	
45-49	0.4	[0.187,1.057]		0.4	[0.114,1.709]		3.5	[2.230,5.503]		2.6	[1.173,5.648]	
<b>Formal education</b>			0.067			0.918			0.015			0.038
None	0.9	[0.624,1.170]		0.7	[0.339,1.484]		3.6	[2.391,5.393]		1.8	[1.025,3.273]	
Primary only	0.5	[0.264,1.084]		0.6	[0.420,0.903]		2.8	[2.236,3.388]		2.3	[1.901,2.868]	
Secondary and above	0.5	[0.266,0.793]		0.6	[0.243,1.381]		1.5	[1.007,2.330]		1.3	[0.842,2.053]	
<b>Marital status</b>			0.144			0.015			0.000			0.000
Never in union	0.5	[0.245,0.904]		0.4	[0.161,0.818]		0.6	[0.331,1.258]		0.6	[0.317,1.207]	
Currently in union	0.7	[0.542,0.965]		0.7	[0.466,1.016]		3.2	[2.592,4.000]		2.2	[1.777,2.713]	
Separated/divorced	1.2	[0.422,3.170]		0.4	[0.165,1.173]		4.2	[2.772,6.227]		3.2	[1.993,5.254]	
Widowed	1.6	[0.529,4.901]		2.2	[0.787,5.837]		2.1	[1.003,4.284]		4.2	[1.905,9.061]	
<b>Wealth quintile</b>			0.629			0.555			0.052			0.065
Poorest	0.7	[0.416,1.081]		0.5	[0.232,1.190]		3.0	[2.139,4.253]		2.1	[1.283,3.333]	
Second	0.6	[0.345,1.140]		0.6	[0.277,1.146]		3.4	[2.343,4.934]		2.6	[1.802,3.706]	
Middle	0.5	[0.246,0.911]		0.4	[0.188,0.831]		2.7	[1.874,3.882]		2.6	[1.804,3.719]	
Fourth	0.8	[0.483,1.237]		0.9	[0.482,1.771]		2.9	[2.045,4.093]		1.7	[1.158,2.563]	
Wealthiest	0.9	[0.476,1.528]		0.7	[0.310,1.502]		1.6	[1.083,2.350]		1.3	[0.807,2.019]	
<b>Place of residence</b>			0.184			0.502			0.075			0.007
Urban	0.9	[0.549,1.385]		0.8	[0.385,1.463]		1.7	[0.972,2.921]		1.1	[0.761,1.731]	
Rural	0.6	[0.416,0.838]		0.6	[0.398,0.841]		2.9	[2.332,3.494]		2.2	[1.727,2.788]	
<b>Health care access<sup>1</sup></b>			0.923			0.834			0.645			0.001
Sufficient access	0.7	[0.374,1.337]		0.6	[0.396,0.942]		2.9	[1.965,4.245]		1.2	[0.810,1.653]	
Limited access	0.7	[0.504,0.926]		0.7	[0.377,1.154]		2.6	[2.127,3.226]		2.4	[1.882,3.154]	
Full Sample	0.7	[0.520,0.917]		0.6	[0.449,0.878]		2.7	[2.198,3.215]		2.0	[1.596,2.476]	

Notes: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

n/a = not available

<sup>1</sup> This is a composite variable reflecting a woman's reports of whether she finds access to health care a major problem

Table 3.2 shows the prevalence of fistula according to health conditions of interest. There were some expected and unexpected associations between particular health conditions of interest and symptoms of fistula. In six countries, not having menstruated in the past six weeks was positively and significantly associated with symptoms of fistula; however, one country reported a significant relationship in the opposite direction (Burkina Faso, 2010). Female genital cutting was associated with having an increased likelihood of fistula in only three countries—Niger (2006), Senegal (2010-11), and Uganda (2011). There appears to be no consistent association between fistula and either anemia or weight; only two countries had significant positive associations with anemia and one country with being underweight. Sexual violence, however, was significantly associated with having symptoms of fistula in many countries: Cameroon (2011), Comoros (2012), Côte d’Ivoire (2011-12), Kenya (2008-09), Malawi (both 2004 and 2010), Rwanda (2005) and Uganda (2011).

Table 3.2 Fistula Symptoms and General Health Conditions

	Benin 2011-12		Burkina Faso 2010		Cameroon 2011		Comoros 2012		Congo (Brazzaville) 2011-12		DRC 2007		Côte d'Ivoire 2011-12		
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	
Weighted Sample Size	16,599		17,067		15,418		5,322		10,819		800		9,986		
Health Condition															
<b>Menstruation</b>		0.326		<b>0.004</b>		0.617		0.987		0.221		0.459		0.311	
Not menstruated in last six weeks	0.8	[0.600,1.131]	0.0	[0.012,0.111]	0.4	[0.224,0.607]	1.5	[0.895,2.499]	0.4	[0.160,0.981]	2.6	[1.090,6.170]	3.3	[2.655,4.090]	
Menstruated in last six weeks	0.7	[0.485,0.954]	0.2	[0.101,0.289]	0.4	[0.301,0.610]	1.5	[1.099,2.059]	0.2	[0.103,0.384]	3.9	[2.265,6.509]	3.8	[3.157,4.457]	
<b>Genital Cutting</b>		0.605		0.653								na		0.075	
Not cut	0.7	[0.538,0.966]	0.1	[0.025,0.334]	na		na		na		na	na	na	3.3	[2.756,3.971]
Has been cut	0.9	[0.454,1.672]	0.1	[0.073,0.218]	na		na		na		na	na	na	4.1	[3.369,5.001]
<b>Sexual Violence<sup>1</sup></b>						<b>0.026</b>		<b>0.000</b>				0.669		<b>0.000</b>	
Never experienced sexual violence	na		na		0.2	[0.092,0.501]	1.4	[0.976,1.916]	na		3.6	[1.326,9.448]	3.6	[2.842,4.455]	
Ever experienced sexual violence	na		na		0.7	[0.344,1.498]	6.5	[3.393,12.183]	na		2.6	[0.873,7.375]	9.4	[6.009,14.457]	
<b>Anemia<sup>2</sup></b>		<b>0.048</b>		0.203		0.708		0.268		<b>0.008</b>		0.213			
Not Anemic	1.1	[0.678,1.921]	0.1	[0.015,0.216]	0.3	[0.190,0.621]	na		0.4	[0.137,1.196]	6.2	[2.472,14.830]	4.0	[2.930,5.475]	
Anemic	0.6	[0.332,1.075]	0.2	[0.060,0.416]	0.4	[0.230,0.695]	na		0.2	[0.062,0.499]	0.9	[0.217,3.548]	3.1	[2.448,4.021]	
<b>Weight<sup>3</sup></b>		0.456		0.237		0.245		0.901		0.223		0.172		0.855	
Normal, overweight or obese	0.7	[0.552,0.966]	0.1	[0.068,0.281]	0.4	[0.242,0.597]	1.5	[1.138,2.085]	0.2	[0.085,0.475]	3.8	[1.667,8.296]	3.6	[2.824,4.509]	
Underweight (BMI < 18.5)	1.0	[0.476,1.943]	0.0	na	0.0	na	1.7	[0.491,5.533]	0.1	[0.008,0.413]	(1.1)	[(0.170,6.291)]	3.3	[1.589,6.815]	
Full Sample	0.7	[0.558,0.960]	0.1	[0.071,0.194]	0.4	[0.304,0.554]	1.5	[1.142,1.980]	0.3	[0.149,0.441]	3.4	[2.139,5.216]	3.6	[3.117,4.188]	

(Continued...)

Table 3.2 – (Continued)

Percentage of women reporting fistula symptoms in 25 DHS surveys, according to selected health conditions, bivariate associations														
Health Condition	Ethiopia 2005		Guinea 2012		Haiti 2012		Kenya 2008-09		Malawi 2004		Malawi 2010		Mali 2006	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Weighted Sample Size	3,262		9,136		14,282		8,435		11,698		23,012		2,146	
<b>Menstruation</b>		<b>0.021</b>	0.540		0.895		0.068		<b>0.000</b>		<b>0.005</b>		<b>0.005</b>	
Not menstruated in last six weeks	4.7	[3.340,6.679]	0.7	[0.438,1.166]	0.7	[0.443,1.138]	1.5	[0.971,2.164]	5.7	[4.928,6.498]	0.8	[0.612,1.079]	0.5	[0.211,1.375]
Menstruated in last six weeks	2.6	[1.806,3.730]	0.6	[0.418,0.867]	0.7	[0.499,0.947]	0.8	[0.458,1.352]	3.9	[3.395,4.528]	0.4	[0.333,0.601]	1.2	[0.612,2.389]
<b>Genital Cutting</b>		0.811	0.534		0.738									0.290
Not cut	3.2	[1.992,5.245]	0.0	na	na		1.0	[0.628,1.457]	na		na		0.0	na
Has been cut	3.5	[2.610,4.621]	0.7	[0.481,0.910]	na		1.1	[0.556,2.163]	na		na		1.1	[0.623,1.841]
<b>Sexual Violence<sup>1</sup></b>		0.226			<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.007</b>		<b>0.007</b>	
Never experienced sexual violence	na		na		0.6	[0.421,0.914]	0.6	[0.386,0.957]	4.1	[3.491,4.695]	0.3	[0.150,0.536]	1.1	[0.538,2.240]
Ever experienced sexual violence	na		na		1.1	[0.480,2.301]	3.0	[1.701,5.070]	6.9	[5.867,8.059]	0.9	[0.494,1.543]	1.3	[0.315,5.468]
<b>Anemia<sup>2</sup></b>		0.528	0.979		0.563				0.669		0.824			0.139
Not Anemic	3.3	[2.084,5.065]	0.6	[0.295,1.126]	0.8	[0.541,1.237]	na		4.1	[3.067,5.358]	0.4	[0.269,0.690]	0.0	na
Anemic	4.4	[1.944,9.697]	0.6	[0.315,1.030]	0.7	[0.464,1.080]	na		3.7	[2.768,5.014]	0.5	[0.230,0.985]	1.1	[0.420,2.987]
<b>Weight<sup>3</sup></b>		0.959	0.931		0.577		0.684		0.686		0.496			0.497
Normal, overweight or obese	3.6	[2.309,5.506]	0.6	[0.385,1.031]	0.8	[0.528,1.111]	1.0	[0.667,1.503]	4.9	[4.364,5.539]	0.5	[0.339,0.745]	1.0	[0.536,1.907]
Underweight (BMI < 18.5)	3.5	[1.568,7.594]	0.6	[0.208,1.714]	1.0	[0.476,1.921]	0.8	[0.419,1.735]	4.6	[3.273,6.367]	0.3	[0.036,1.785]	0.5	[0.064,3.623]
Full Sample	3.4	[2.670,4.344]	0.6	[0.465,0.882]	0.7	[0.517,0.930]	1.0	[0.700,1.414]	4.7	[4.225,5.196]	0.6	[0.484,0.720]	1.0	[0.542,1.673]

(Continued...)

Table 3.2 – (Continued)

Percentage of women reporting fistula symptoms in 25 DHS surveys, according to selected health conditions, bivariate associations														
	Mali 2012-13		Niger 2006		Niger 2012		Nigeria 2008		Pakistan 2006-07		Rwanda 2005		Senegal 2010-11	
Weighted Sample Size	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI
Health Condition														
<b>Menstruation</b>			<b>0.003</b>			0.635		0.771		0.867		0.799		0.849
Not menstruated in last six weeks	0.9	[0.615,1.289]		0.6	[0.256,1.304]		0.3	[0.152,0.802]		0.4	[0.296,0.533]		3.3	[2.671,4.153]
Menstruated in last six weeks	0.4	[0.214,0.660]		0.7	[0.347,1.511]		0.4	[0.195,0.867]		4.7	[3.840,5.649]		3.2	[2.488,4.202]
<b>Genital Cutting</b>			0.064			<b>0.004</b>		0.054		0.649				<b>0.029</b>
Not cut	0.2	[0.047,0.790]		0.6	[0.303,1.156]		0.3	[0.191,0.614]		na			na	[0.023,0.198]
Has been cut	0.6	[0.451,0.899]		4.4	[1.042,16.511]		2.1	[0.279,13.544]		na		na	na	[0.123,0.629]
<b>Sexual Violence<sup>1</sup></b>			0.853			0.392		0.141				<b>0.000</b>		
Never experienced sexual violence	0.6	[0.367,1.083]		0.5	[0.150,1.446]		na			na		na	na	na
Ever experienced sexual violence	0.6	[0.130,2.264]		0.0	na		na			na		na	na	na
<b>Anemia<sup>2</sup></b>			0.391			0.353		0.066				0.897		0.254
Not Anemic	0.4	[0.223,0.828]		1.1	[0.478,2.522]		0.6	[0.242,1.583]		na		na	[2.226,4.074]	[0.056,0.847]
Anemic	0.6	[0.351,1.055]		0.7	[0.182,2.337]		0.1	[0.015,0.736]		na		na	[1.825,4.614]	[0.025,0.258]
<b>Weight<sup>3</sup></b>			0.729			0.763		0.336		0.065		<b>0.043</b>		0.619
Normal, overweight or obese	0.5	[0.283,0.793]		1.0	[0.414,2.593]		0.6	[0.263,1.289]		na		na	[2.407,4.153]	[0.042,0.515]
Underweight (BMI < 18.5)	0.4	[0.103,1.327]		0.8	[0.110,5.102]		0.0	na		na		na	na	[0.071,0.708]
Full Sample	0.6	[0.422,0.850]		0.7	[0.354,1.213]		0.4	[0.217,0.669]		4.6	[4.025,5.195]		3.3	[2.735,3.967]

(Continued...)

Table 3.2 – (Continued)

Health Condition	Sierra Leone 2013			Tanzania 2010			Uganda 2006			Uganda 2011			
	Weighted Sample Size	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value
<b>Menstruation</b>													
Not menstruated in last six weeks	0.7	[0.429,1.005]	0.778	0.5	[0.250,0.833]	0.217	3.3	[2.629,4.139]	0.005	2.2	[1.730,2.893]	0.209	
Menstruated in last six weeks	0.7	[0.504,0.991]	0.239	0.7	[0.481,1.076]	0.286	2.2	[1.694,2.816]	0.373	1.8	[1.379,2.416]	0.000	
<b>Genital Cutting</b>													
Not cut	0.4	[0.158,1.063]	0.980	0.6	[0.395,0.854]	0.221	2.9	[2.226,3.788]	0.288	1.7	[1.183,2.331]	0.444	
Has been cut	0.7	[0.543,0.962]	0.069	0.9	[0.443,1.841]	0.261	5.2	[1.385,17.647]	0.072	7.6	[3.533,15.478]	0.227	
<b>Sexual Violence<sup>1</sup></b>													
Never experienced sexual violence	0.9	[0.575,1.375]	0.796	0.6	[0.358,0.879]	0.920	2.1	[1.342,3.260]	0.606	1.3	[0.755,2.198]		
Ever experienced sexual violence	0.9	[0.397,1.938]	0.069	0.9	[0.475,1.821]	0.261	3.0	[1.868,4.651]	0.072	3.9	[2.236,6.566]		
<b>Anemia<sup>2</sup></b>													
Not Anemic	0.5	[0.279,0.727]	0.796	0.7	[0.482,1.055]	0.920	2.3	[1.586,3.326]	0.606	2.4	[1.667,3.490]		
Anemic	0.8	[0.507,1.254]	0.069	0.5	[0.268,0.880]	0.920	3.8	[2.442,5.754]	0.606	3.1	[1.623,5.785]		
<b>Weight<sup>3</sup></b>													
Normal, overweight or obese	0.6	[0.397,0.875]	0.796	0.7	[0.473,0.989]	0.920	2.7	[1.964,3.747]	0.606	2.7	[1.794,4.115]		
Underweight (BMI < 18.5)	0.7	[0.252,1.809]	0.069	0.7	[0.235,1.771]	0.920	2.1	[0.835,5.378]	0.606	1.5	[0.576,3.677]		
Full Sample	0.7	[0.520,0.917]	0.069	0.6	[0.449,0.878]	0.920	2.7	[2.198,3.215]	0.606	2.0	[1.596,2.476]		

Notes: All denominators are weighted. No domestic violence weight was available for the Niger 2006 or Rwanda datasets. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases.

n/a = not available

<sup>1</sup> Indicator was constructed from the intersection of three potential indicators: (1) report of husband ever forced sex, (2) report of first sex forced, (3) report of forced sex within specific time frames (ever, last sex, last 12 months). Indicator availability varies by country, but all are considered potential sources of trauma to the woman's vaginal canal.

<sup>2</sup> Anemia indicator includes mild, moderate, and severe forms.

<sup>3</sup> This measurement excludes women who report currently being pregnant.



Table 3.3 shows the prevalence of fistula according to childbirth indicators. These indicators include questions related to predictors of other maternal morbidities, such as age at first birth and height, as well as indicators of health care for childbirth in the last five years, such as facility-based delivery and having a skilled attendant present at birth. Except for stillbirth, no single predictor was significantly associated with reporting symptoms of fistula across more than four countries. It was possible to identify stillbirths in 24 of the 25 surveys. Of those 24 countries, seven demonstrated a significant association between having had a stillbirth and symptoms of fistula. However, reported stillbirths are infrequent and results should be interpreted with caution.

Table 3.3 Fistula Symptoms and Childbirth Indicators

	Benin 2011-12		Burkina Faso 2010		Cameroon 2011		Comoros 2012		Congo (Brazzaville) 2011-12		DRC 2007		Côte d'Ivoire 2011-12				
Weighted Sample Size	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value		
Childbirth-related indicator of interest																	
<b>Age of marriage (ages 20-24)</b>																	
Married at age 18 or older	0.4	[0.192,0.831]	<b>0.020</b>	0.2	[0.131,0.819]	0.959	0.9	[0.499,1.713]	0.092	0.3	[0.060,1.041]	0.338	4.1	[1.518,10.627]	0.451		
Married before age 18	1.0	[0.531,2.007]		0.0	na		2.4	[0.935,5.844]		0.0	na		1.9	[0.284,11.175]			
<b>Age of first (live) birth</b>																	
Age of first birth less than 18 years	0.7	[0.504,0.988]	0.942	0.1	[0.057,0.228]	0.781	1.9	[1.271,2.767]	0.403	0.2	[0.081,0.354]	<b>0.024</b>	3.0	[1.619,5.504]	0.454		
Age of first birth 18 or older	0.7	[0.466,1.032]		0.2	[0.062,0.343]		2.4	[1.507,3.683]		0.5	[0.259,1.019]		4.4	[1.974,9.354]			
<b>Age at first intercourse<sup>1</sup></b>																	
Age at first intercourse less than 16 years	0.5	[0.357,0.762]	<b>0.000</b>	0.1	[0.069,0.231]	0.874	1.7	[1.155,2.411]	0.297	0.3	[0.116,0.691]	0.995	3.6	[2.045,6.256]	0.917		
Age at first intercourse 16 or older	1.2	[0.823,1.693]		0.1	[0.047,0.258]		2.2	[1.366,3.629]		0.3	[0.152,0.534]		3.4	[1.558,7.345]			
<b>Stillbirth<sup>2</sup></b>																	
Never had a stillbirth	0.7	[0.561,0.965]	0.540	0.1	[0.063,0.184]	0.377	1.5	[1.125,1.961]	0.076	0.3	[0.149,0.441]	0.815	3.3	[2.117,5.237]	0.687		
Ever had stillbirth	0.0	na		1.0	[0.251,4.101]		0.0			0.4	[0.048,2.555]		4.3	[1.869,9.463]			
<b>Height</b>																	
145 cm and over	0.7	[0.534,0.925]	<b>0.014</b>	0.1	[0.057,0.249]	0.797	1.5	[1.149,2.015]	0.076	0.3	[0.122,0.616]	0.815	3.1	[1.375,6.796]	0.556		
Under 145 cm	1.7	[0.852,3.336]		(0.0)	(na)		0.5	[0.110,1.854]		0.4	[0.048,2.555]		5.1	[1.429,16.330]			
Childbirth-related indicator for last birth in the last 5 years:																	
Total (weighted) births in the last 5 years		8,993			10,480			2,057			5,882			456		5,223	
<b>Caesarean section</b>																	
No delivery by caesarian section	0.7	[0.499,0.924]	<b>0.027</b>	0.1	[0.042,0.193]	0.701	1.7	[1.176,2.577]	0.446	0.2	[0.076,0.310]	0.143	3.8	[1.920,7.306]	0.135	3.9	[3.238,4.688]
Delivery by caesarian section	1.5	[0.726,3.033]		0.0	na		2.5	[0.932,6.468]		0.5	[0.108,2.356]		(9.8)	[3.144,26.556]		7.6	[3.783,14.788]
<b>Facility delivery</b>																	
Delivered outside health facility	0.3	[0.080,0.817]	0.058	0.2	[0.057,0.406]	0.221	1.6	[0.675,3.519]	0.658	0.2	[0.025,1.271]	0.986	2.9	[0.932,8.445]	0.517	3.3	[2.551,4.239]
Delivered in a health facility	0.8	[0.580,1.088]		0.1	[0.020,0.193]		1.9	[1.213,2.962]		0.2	[0.090,0.347]		4.4	[2.146,8.975]		4.5	[3.567,5.702]
<b>Skilled attendance<sup>3</sup></b>																	
No skilled attendant present	0.5	[0.199,1.109]	0.289	0.2	[0.058,0.415]	0.202	1.8	[0.736,4.435]	0.999	0.0	na	0.478	1.5	[0.285,7.473]	0.174	3.2	[2.455,4.110]
Skilled attendant present	0.8	[0.558,1.071]		0.1	[0.020,0.191]		1.8	[1.175,2.816]		0.2	[0.099,0.354]		4.8	[2.463,9.208]		4.5	[3.606,5.659]
<b>Postpartum check<sup>4</sup></b>																	
No postpartum check	1.8	[0.838,3.742]	<b>0.000</b>	0.1	[0.010,0.512]	0.854	4.8	[2.230,9.925]	<b>0.018</b>	0.3	[0.075,1.412]	0.284	4.3	[2.271,7.815]	0.582	3.7	[2.006,6.690]
Postpartum check	0.4	[0.245,0.639]		0.1	[0.033,0.232]		1.7	[0.948,2.855]		0.1	[0.059,0.306]		0.1	[0.059,0.306]		3.9	[3.050,4.880]
Full Sample	0.7	[0.558,0.960]		0.1	[0.071,0.194]		1.5	[1.142,1.980]		0.3	[0.149,0.441]		3.4	[2.139,5.216]		3.6	[3.117,4.188]

(Continued...)

Table 3.3 – (Continued)

	Ethiopia 2005		Guinea 2012		Haiti 2012		Kenya 2008-09		Malawi 2004		Malawi 2010	
Weighted Sample Size	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value
Childbirth-related indicator of interest												
<b>Age of marriage (ages 20-24)</b>												
Married at age 18 or older	2.1	[0.902,5.034]	0.292	0.7	[0.341,1.233]	0.789	0.7	[0.412,1.993]	0.175	3.5	[2.401,5.101]	<b>0.001</b>
Married before age 18	4.6	[1.435,13.966]		0.6	[0.304,2.567]		2.0	[0.854,4.474]		7.2	[5.775,8.905]	
<b>Age of first (live) birth</b>												
Age of first birth less than 18 years	3.9	[2.679,5.756]	0.127	1.1	[0.700,1.615]	<b>0.011</b>	0.9	[0.843,2.030]	0.985	5.5	[4.793,6.237]	0.119
Age of first birth 18 or older	5.8	[4.100,8.105]		0.5	[0.320,0.801]		1.3	[0.868,1.994]		6.3	[5.482,7.295]	
<b>Age at first intercourse<sup>1</sup></b>												
Age at first intercourse less than 16 years	3.7	[2.569,5.378]	0.175	0.7	[0.463,1.170]	0.770	1.3	[0.807,1.960]	0.586	4.7	[4.061,5.455]	<b>0.028</b>
Age at first intercourse 16 or older	5.1	[3.705,7.100]		0.7	[0.436,1.032]		1.1	[0.661,1.733]		6.0	[5.131,6.939]	
<b>Stillbirth<sup>2</sup></b>												
Never had a stillbirth	3.4	[2.687,4.371]		0.6	[0.462,0.877]	0.531	na	[0.643,1.323]	<b>0.000</b>	4.6	[4.137,5.101]	<b>0.004</b>
Ever had stillbirth	*			1.0	[0.236,4.154]		na	[3.135,24.043]		10.1	[5.925,16.582]	
<b>Height</b>												
145 cm and over	3.4	[2.344,4.950]	0.445	0.5	[0.345,0.872]	0.131	0.8	[0.702,1.430]	0.706	4.9	[4.408,5.419]	0.910
Under 145 cm	*			2.3	[0.318,15.099]		2.0	[0.098,4.744]		5.0	[3.005,8.318]	
Childbirth-related indicator for last birth in the last 5 years:												
Total (weighted) births in the last 5 years		1,411			4,989			3,967			7,271	13,658
<b>Caesarean section</b>												
No delivery by caesarian section	5.0	[3.533,7.037]	0.500	0.7	[0.445,1.041]	0.437	0.8	[0.496,1.192]	0.453	1.3	[0.828,1.930]	0.054
Delivery by caesarian section	7.2	[2.509,19.117]		0.0	na		1.2	[0.391,3.777]		2.7	[1.121,6.222]	
<b>Facility delivery</b>												
Delivered outside health facility	5.6	[3.908,7.858]	<b>0.041</b>	0.7	[0.404,1.107]	0.954	0.8	[0.445,1.282]	0.602	1.2	[0.606,2.193]	0.522
Delivered in a health facility	2.3	[0.966,5.228]		0.7	[0.322,1.323]		0.9	[0.538,1.522]		1.6	[0.977,2.634]	
<b>Skilled attendant<sup>3</sup></b>												
No skilled attendant present	5.1	[3.420,7.559]	0.935	0.7	[0.406,1.189]	0.807	0.8	[0.444,1.281]	0.605	1.2	[0.626,2.267]	0.526
Skilled attendant present	5.0	[2.621,9.155]		0.6	[0.333,1.185]		0.9	[0.538,1.505]		1.5	[0.942,2.535]	
<b>Postpartum check<sup>4</sup></b>												
No postpartum check	*			0.3	[0.048,2.340]	0.522	0.9	[0.272,2.647]	0.763	1.4	[0.815,2.447]	0.321
Postpartum check	3.4	[1.274,7.262]		0.7	[0.337,1.270]		0.7	[0.378,1.289]		1.3	[0.751,2.276]	
Full Sample	3.4	[2.670,4.344]		0.6	[0.465,0.882]		0.7	[0.517,0.930]		1.0	[0.700,1.414]	

(Continued...)

Table 3.3 – (Continued)

	Malawi 2010		Mali 2006		Mali 2012-13		Niger 2006		Niger 2012		Nigeria 2008		Pakistan 2006-07			
Weighted Sample Size	%	95% CI	p-value	%	95% CI	%	95% CI	p-value	%	95% CI	%	95% CI	p-value	%	95% CI	
Childbirth-related indicator of interest																
<b>Age of marriage (ages 20-24)</b>																
Married at age 18 or older	1.0	[0.587,1.707]	0.125	0.0	na	0.281	0.356	0.299	0.0	na	0.251	0.3	[0.128,0.546]	0.851	5.8	[3.543,9.301]
Married before age 18	0.5	[0.249,1.032]		1.2	[0.343,4.016]	0.496	0.562	0.429	0.8	[0.247,2.341]	0.997	0.3	[0.140,0.609]		5.2	[3.602,7.523]
<b>Age of first (live) birth</b>																
Age of first birth less than 18 years	0.8	[0.652,1.074]	0.058	1.3	[0.623,2.541]	0.496	0.562	0.429	0.4	[0.202,0.947]	0.997	0.5	[0.365,0.612]	0.770	4.6	[3.949,5.289]
Age of first birth 18 or older	0.6	[0.393,0.786]		0.9	[0.359,2.222]	0.668	0.752	0.942	0.4	[0.196,0.969]	<b>0.038</b>	0.5	[0.367,0.683]		4.6	[3.623,5.777]
<b>Age at first intercourse<sup>1</sup></b>																
Age at first intercourse less than 16 years	0.7	[0.536,0.909]	0.896	1.1	[0.511,2.545]	0.629	0.330	0.879	0.1	[0.033,0.569]	0.889	0.4	[0.290,0.519]	0.186	na	na
Age at first intercourse 16 or older	0.7	[0.528,0.973]	<b>0.000</b>	1.0	[0.433,2.086]	0.628	0.685	<b>0.004</b>	0.6	[0.323,1.180]	0.357	0.5	[0.386,0.668]	0.084	na	na
<b>Stillbirth<sup>2</sup></b>																
Never had a stillbirth	0.6	[0.449,0.680]	0.626	1.0	[0.550,1.702]	0.628	0.685	<b>0.004</b>	0.4	[0.205,0.661]	0.357	0.4	[0.330,0.485]	0.084	4.6	[4.009,5.200]
Ever had stillbirth	3.4	[1.492,7.593]		(0.0)	(na)	0.629	0.330	0.879	0.9	[0.130,6.378]	0.889	1.1	[0.341,3.267]	0.575	5.0	[2.617,9.308]
<b>Height</b>																
145 cm and over	0.5	[0.311,0.671]	0.626	0.9	[0.542,1.658]	0.629	0.330	0.879	0.4	[0.197,0.978]	0.889	0.4	[0.337,0.496]	0.575	na	na
Under 145 cm	0.7	[0.161,2.615]		(2.9)	(0.263,25.028)	0.000	0.000		*	na		0.5	[0.223,1.220]		na	na
Childbirth-related indicator for last birth in the last 5 years:																
Total (weighted) births in the last 5 years		13,658		1,400	6,773	2,326	3,520	17,594	5,603							
<b>Caesarean section</b>																
No delivery by caesarian section	0.7	[0.520,0.866]	<b>0.043</b>	1.0	[0.527,2.033]	0.066	0.414	0.327	0.6	[0.296,1.211]	0.624	0.4	[0.288,0.493]	0.102	5.4	[4.616,6.240]
Delivery by caesarian section	1.6	[0.703,3.407]		(2.5)	[0.307,17.905]	1.7	[0.525,5.264]		1.6	[0.240,9.567]		0.0	[0.301,2.929]		6.9	[4.538,10.343]
<b>Facility delivery</b>																
Delivered outside health facility	0.6	[0.391,1.043]	0.611	1.8	[0.873,3.801]	0.315	<b>0.028</b>	0.397	0.7	[0.290,1.557]	0.213	0.3	[0.247,0.479]	0.182	5.5	[4.633,6.623]
Delivered in a health facility	0.7	[0.560,0.979]		0.5	[0.161,1.388]	0.395	<b>0.011</b>	0.102	0.4	[0.156,0.999]	0.396	0.2	[0.055,0.876]		5.5	[4.401,6.841]
<b>Skilled attendance<sup>3</sup></b>																
No skilled attendant present	0.7	[0.407,1.055]	0.687	2.1	[0.961,4.456]	0.052	0.230	0.204	0.5	[0.239,1.118]	0.171	0.3	[0.244,0.477]	0.244	5.5	[4.585,6.566]
Skilled attendant present	0.7	[0.555,0.974]		0.4	[0.147,1.263]	0.052	0.230	0.204	0.3	[0.089,0.910]	0.171	0.5	[0.308,0.682]		5.5	[4.443,6.808]
<b>Postpartum check<sup>4</sup></b>																
No postpartum check	na			0.9	[0.428,1.830]	0.052	0.230	0.204	1.4	[0.321,5.864]	0.160	0.3	[0.234,0.469]	0.160	na	na
Postpartum check	na			2.1	[0.597,7.163]	0.052	0.230	0.204	0.4	[0.159,1.154]	0.160	0.5	[0.322,0.674]		na	na
Full Sample	0.6	[0.484,0.720]		1.0	[0.542,1.673]	0.6	0.6	0.6	0.4	[0.217,0.669]	0.46	0.4	[0.335,0.489]		4.6	[4.025,5.195]

(Continued...)

Table 3.3 – (Continued)

Childbirth-related indicator of interest	Rwanda 2005			Senegal 2010-11			Sierra Leone 2013			Tanzania 2010			Uganda 2006			Uganda 2011			
	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	%	95% CI	p-value	
<b>Age of marriage (ages 20-24)</b>																			
Married at age 18 or older	6.3	[4.506,8.658]	<b>0.013</b>	0.0	[0.004,0.196]	0.135	0.5	[0.206,1.140]	0.719	0.3	[0.111,1.042]	0.584	2.2	[1.327,3.719]	0.149	1.5	[0.829,2.836]	0.448	
Married before age 18	2.3	[1.045,5.057]		0.2	[0.024,1.228]		0.6	[0.261,1.395]		0.6	[0.136,2.282]		3.4	[2.190,5.351]		2.2	[1.137,4.160]		
<b>Age of first (live) birth</b>																			
Age of first birth less than 18 years	3.4	[2.762,4.100]	0.418	0.2	[0.083,0.454]	0.648	0.8	[0.555,1.088]	0.383	0.6	[0.430,0.971]	0.523	3.4	[2.741,4.210]	0.938	2.3	[1.799,3.020]	0.734	
Age of first birth 18 or older	2.8	[1.727,4.348]		0.2	[0.059,0.359]		1.0	[0.646,1.387]		0.8	[0.442,1.555]		3.4	[2.615,4.516]		2.5	[1.771,3.483]		
<b>Age at first intercourse<sup>1</sup></b>																			
Age at first intercourse less than 16 years	3.3	[2.685,3.988]	0.688	0.2	[0.077,0.440]	0.579	0.6	[0.410,1.006]	0.415	0.5	[0.337,0.802]	0.294	2.4	[1.861,3.029]	<b>0.001</b>	2.3	[1.810,2.910]	0.850	
Age at first intercourse 16 or older	2.9	[1.607,5.163]		0.1	[0.051,0.323]		0.8	[0.560,1.110]		0.8	[0.426,1.405]		3.9	[3.071,4.920]		2.4	[1.682,3.338]		
<b>Stillbirth<sup>2</sup></b>																			
Never had a stillbirth	3.3	[2.737,3.997]	0.696	0.1	[0.065,0.235]	0.721	0.7	[0.523,0.923]	0.550	0.6	[0.431,0.858]	0.111	2.6	[2.134,3.156]	<b>0.017</b>	1.9	[1.518,2.401]	<b>0.001</b>	
Ever had stillbirth	2.6	[0.808,8.140]		0.0	na		0.0	na		2.1	[0.432,9.348]		6.8	[3.076,14.211]		6.1	[3.019,11.986]		
<b>Height</b>																			
145 cm and over	3.0	[2.335,3.948]	0.297	0.2	[0.059,0.389]	0.892	0.6	[0.419,0.849]	0.461	0.6	[0.439,0.882]	0.478	2.9	[2.145,3.888]	0.432	2.5	[1.729,3.618]	0.863	
Under 145 cm	0.0	na		(0.0)	(na)		1.2	[0.176,8.104]		0.4	[0.087,1.529]		4.6	[1.389,14.315]		(3.0)	[(0.407,18.797)]		
Childbirth-related indicator for last birth in the last 5 years:																			
Total (weighted) births in the last 5 years		5,420			7,678			8,593			5,513			5,025			4,952		
<b>Caesarean section</b>																			
No delivery by caesarian section	3.3	[2.736,3.996]	0.558	0.2	[0.080,0.380]	0.945	1.0	[0.696,1.315]	0.412	0.6	[0.351,0.900]	0.206	3.5	[2.852,4.280]	0.416	2.1	[1.663,2.654]	0.302	
Delivery by caesarian section	2.5	[0.920,6.446]		0.2	[0.026,1.345]		0.5	[0.119,2.239]		1.3	[0.376,4.205]		4.9	[2.115,10.836]		3.0	[1.574,5.510]		
<b>Facility delivery</b>																			
Delivered outside health facility	3.4	[2.774,4.152]	0.596	0.2	[0.075,0.411]	0.969	1.0	[0.661,1.437]	0.689	0.6	[0.360,1.152]	0.750	3.9	[3.105,4.947]	0.107	2.2	[1.553,3.180]	0.806	
Delivered in a health facility	3.1	[2.159,4.341]		0.2	[0.067,0.441]		0.9	[0.565,1.352]		0.6	[0.288,1.082]		3.1	[2.344,4.061]		2.1	[1.608,2.759]		
<b>Skilled attendance<sup>3</sup></b>																			
No skilled attendant present	2.9	[2.275,3.614]	0.058	0.1	[0.057,0.314]	0.578	1.0	[0.663,1.515]	0.673	0.6	[0.321,1.076]	0.933	4.0	[3.125,4.998]	0.086	2.1	[1.469,3.114]	0.966	
Skilled attendant present	3.9	[3.022,5.133]		0.2	[0.075,0.492]		0.9	[0.603,1.335]		0.6	[0.326,1.139]		3.1	[2.321,4.020]		2.2	[1.666,2.803]		
<b>Postpartum check<sup>4</sup></b>																			
No postpartum check	*			0.4	[0.127,1.201]	0.326	1.3	[0.512,3.109]	0.322	na		na	3.3	[2.616,4.151]	0.109	4.1	[1.948,8.528]	<b>0.037</b>	
Postpartum check	7.8	[3.504,16.466]		0.2	[0.075,0.484]		0.8	[0.517,1.140]		na		4.3	[3.175,5.698]		1.7	[1.115,2.553]			
Full Sample	3.3	[2.735,3.967]		0.1	[0.064,0.232]		0.7	[0.520,0.917]		0.6	[0.449,0.878]		2.7	[2.198,3.215]		2.0	[1.596,2.476]		

Notes: All denominators are weighted and noted in parentheses for indicators where a reduced sample is used. Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

n/a = not available  
<sup>1</sup> Among women who have had sexual intercourse  
<sup>2</sup> Indicator was constructed from reports of having ever lost a pregnancy at the 7th, 8th, or 9th (completed) month. Women who lost a pregnancy later than the 9th month were excluded.  
<sup>3</sup> Skilled attendance included delivery by doctor, nurse, midwife, or trained birth attendant. Attendance by a traditional birth attendant is not considered skilled attendance.  
<sup>4</sup> Excludes women who do not know when postpartum check happened

## 4. Limitations and Discussion

There were limitations in preparing a supplement to a study published seven years earlier. Without access to the detailed methodology used in the original report, it was difficult to match exactly what was previously calculated. The following is a description of slight variations between the original report and this supplement in the results presented.

The total number of eligible women for DRC (2007) and Mali (2006) presented in Table 1.1 of this supplement does not match the numbers in the Table 1.1 of the 2008 report. In Table 2.1 of the original report, the indicator for caesarian section should specify that the estimate is only for births within the last five years.

There is a slight difference between the original report and this supplement in the estimated prevalence of fistula in the Uganda (2006). The numbers presented here are consistent with the coding of the fistula variable in all other countries, whereby cases coded “don’t know” were excluded from the denominator. In Uganda, the original report included in the denominator those women who responded “don’t know.”

The percentages of women having fistula within the age categories were entered into the wrong cells in Table 3.1 of the 2008 report for Malawi 2004; the corrected numbers are presented in Table 3.1 of this supplement. The access variable in the original report could not be replicated. The original report stated, “This is a composite variable reflecting a woman's reports of whether she finds access to health care a major problem.” In this supplement, access is limited if any of the following are reported to be a major problem for getting medical help when needed: getting permission to go for treatment, knowing where to go, getting money for treatment, distance to health facility, having to take transport, transport cost, not wanting to go alone, concern that there may not be a female provider or any health provider, concern that there is no provider at all, and concern that drugs may not be available.

Similar yet minor differences in the covariates were found in Tables 3.2 and 3.3 for being underweight (a body mass index of less than 18.5), giving birth at a health facility for the last birth in the last five years, having a skilled attendant for the last birth in the last five years, receiving postnatal care for the last birth in the last five years, and being less than 145 cm in height. This supplement presents the current DHS standards for calculation. Another difference is in the calculation of stillbirth. The original report specifies that this indicator was created from women responding that they had a terminated pregnancy in the seventh, eighth, or ninth month. For the purposes of this supplement, women who inaccurately reported that they lost a pregnancy after the (completed) ninth month were excluded. Other minor differences in calculation were noted for some indicators in Rwanda (2005) and Pakistan (2006-07), which could be due to sampling weights or other methods in the 2008 report.

Fistula, though devastating where it happens, is a rare event that is difficult to capture effectively in a household survey. Despite the large sample sizes in DHS surveys, few women report having experienced it, for reasons presented in the 2008 report. Further analysis such as logistic regression, for exploring the characteristics of women who have experienced fistula, is inappropriate due to the small number of women reporting these symptoms.

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