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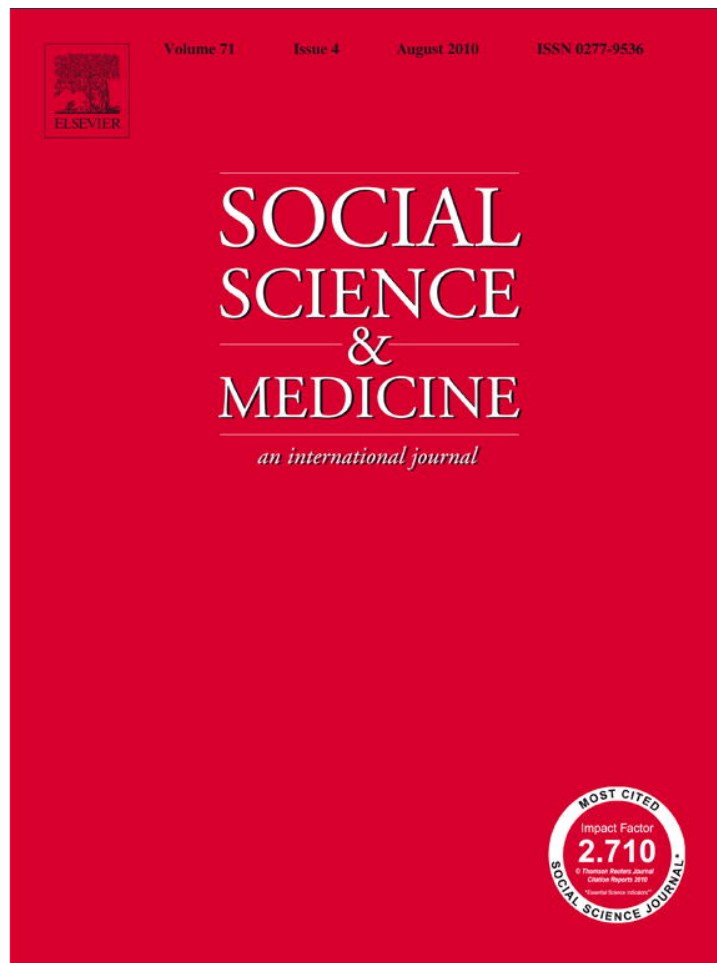
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## Use of biomedical obstetric care in rural Tanzania: The role of social and material inequalities

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### ABSTRACT

Despite over 20 years of efforts to improve maternal health, complications of pregnancy and childbirth continue to threaten women's lives in many countries of sub-Saharan Africa. To reduce maternal mortality levels and achieve Millennium Development Goal Five, institutions working for safe motherhood are committed to making biomedical obstetric care more available to women during childbirth. However, implementation of this strategy is not reaching women at the lower end of the socioeconomic spectrum for reasons that are not well understood. Using data from fieldwork conducted between September 2007 and June 2008, this study examines women's use of biomedical obstetric care in two rural districts of south-central Tanzania where this care was being supplied. Specifically, it seeks to explain how social and material inequalities affect decisions and behaviors related to childbirth.

In addressing this aim we employed a mixed-methods study design. Effects of sociodemographic characteristics on obstetric care use were examined with logistic regression analysis ( $n = 1150$ ), while perspectives and experiences of childbearing women were explored with participant observation and in-depth interviews ( $n = 48$ ). The results from quantitative and qualitative study components were interpreted in light of each other. Statistically significant social and material factors related to use of care included ethnicity, education, parity, and household assets. Qualitative themes involved physical, economic, and social access to health facilities as well as issues of risk perception and self-identity.

The overall findings suggest that use of obstetric care is influenced by a complex interplay of factors closely tied to relative status in family and community. As individual agents differentially positioned by multiple markers of power, women pragmatically negotiate amidst a wide array of deterrents and motivators to secure the best care they can. In order to improve use of biomedical obstetric care, interventions aimed at increasing availability of these services should focus on improving access for women who are disadvantaged.

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### Introduction

Despite considerable efforts in global maternal health over the past 20 years, pregnancy and childbirth-related complications continue to threaten women's lives in many resource-poor contexts. Patterns of maternal death across and within countries reflect how preventable these losses are, given adequate services and health care systems that facilitate physical, economic, and social access. With an estimated 900 maternal deaths per 100,000 live births, sub-Saharan Africa has the highest maternal mortality ratio in the world and accounts for over half of all maternal deaths. Women in Tanzania face a one in 24 chance of dying in their lifetimes from maternal causes, compared to a one in 7300 chance for

women in developed regions (World Health Organization, 2007). Perhaps most disquieting, however, is the severe lack of progress in sub-Saharan Africa since the establishment of the Safe Motherhood Initiative in 1987.

The United Nations community has recognized this issue as a priority problem; reduction of maternal mortality ratio (MMR) by three-fourths is included as one of eight UN Millennium Development Goals to be reached by 2015 (MDG-5). The prevailing strategy is to make biomedical obstetric care (often called "skilled attendance") available to all women in childbirth, where "biomedical" and "obstetric" refer to allopathic medicine with professional providers trained to treat or refer complications. The rationale for this focus is that complications leading to poor outcomes are difficult to predict and tend to occur during the intrapartum and immediate postpartum periods (Ronsmans & Graham, 2006; World Health Organization, 2005).

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Sub-Saharan Africa demonstrates alarming figures on use of obstetric care. While over 90% of women in most countries receive at least some antenatal care, only about half deliver in health facilities (Measure DHS, 2008). Certainly, a lack of available services contributes to this under-use. However, while improving supply is necessary, it is not sufficient. Obstetric care must be sought in order to be received, and it appears women neither seek nor receive this care uniformly. Interventions aimed to increase the proportion of deliveries attended by professional providers are not reaching women at the lower end of the socioeconomic spectrum, while those at the upper end are obtaining more and higher-quality services (Gwatkin, Bhuiya, & Victoria, 2004). In Tanzania, 47% of women deliver in a health facility and 53% deliver at home, but over 85% of the wealthiest and about 30% of the poorest receive facility-based care (National Bureau of Statistics [Tanzania] & ORC Macro, 2005).

One problem with implementing the current strategy is that crucial differences among women are often overlooked. Popular discourse in maternal health tends to represent women in poor and transitional countries as an aggregate that is destitute, uneducated, tradition-bound, and dependant on Northern expertise for survival – a portrayal criticized in feminist spheres as a postcolonial construction of the “third world woman” (Mohanty, 1991). Making biomedical obstetric care available to childbearing women should be an imperative. However, if the assumption remains that these women are a homogenous group with fixed desires and responses, interventions are likely to benefit some and exclude others. The ways in which processes of inequality influence demand for and access to health services need to be better understood. This study therefore examines use of obstetric care in rural Tanzania, attempting to provide insight into how and why women of different social and material positions desire, decide, and act in relation to childbirth services.

## Use of biomedical obstetric care

### Quantitative studies

Analyses of Demographic and Health Survey data in up to 56 developing countries find that proportion of deliveries with professional providers are far higher among wealthy than poor groups – a gap greater than economic disparities for use of antenatal care, immunizations, family planning, and treatment of childhood illnesses (Gwatkin et al., 2004; Houweling, Ronsmans, Campbell, & Kunst, 2007). Multivariate analyses with country or community-level data show significant and positive associations between measures of material status and deliveries with skilled care providers or in health facilities (Anwar, Killewo, Chowdhury, & Dasgupta, 2005; Mrisho et al., 2007; Tann et al., 2007). A recent systematic review examines the scale of this problem and considers the weight of context-related causes in observed variation (Say & Raine, 2007).

Sociodemographic factors beyond material status also play an important role. Maternal education exhibits a positive relationship with obstetric care use, while age or parity tend to have a negative association (Anwar et al., 2005; Gleit, Goldman, & Rodriguez, 2003; Mrisho et al., 2007; Paul & Rumsey, 2002; Stekelenburg, Kyanamina, Mukelabai, Wolffers, & van Roosmalen, 2004; Stephenson, Baschieri, Clements, Hennink, & Madise, 2006; Tann et al., 2007; Yanagisawa, Oum, & Wakai, 2006). Occupation, marital status, women's autonomy, ethnicity, and religion demonstrate an effect as well, but the direction and strength of these relationships are specific to context (Bloom, Wypij, & Das Gupta, 2001; Gleit et al., 2003; Mekonnen & Mekonnen, 2003; Mrisho

et al., 2007; Stekelenburg et al., 2004; Tann et al., 2007; Thind, Mohani, Banerjee, & Hagigi, 2007).

A few other determinants deserve mention. Distance from/time to health facilities have a strong inverse association with use of obstetric care (Anwar et al., 2005; Mpembeni et al., 2007; Stekelenburg et al., 2004; Yanagisawa et al., 2006), as does living in a rural area (Houweling et al., 2007; Say & Raine, 2007; Stephenson et al., 2006; Thind et al., 2007). Formal and informal costs also effect care seeking in a negative manner (Able-Smith & Rawal, 1992; Kowalewski, Mujinja, & Jahn, 2002; Stekelenburg et al., 2004). Additional factors include antenatal care visits, referral for facility delivery, previous delivery care, perceived complications, and knowledge or beliefs about treatment (Anwar et al., 2005; Gleit et al., 2003; Mpembeni et al., 2007; Paul & Rumsey, 2002; Stekelenburg et al., 2004; The Skilled Care Initiative, 2005; Thind et al., 2007; Yanagisawa et al., 2006).

### Qualitative studies

Findings from semi-structured interviews and focus group discussions in sub-Saharan Africa identify the following barriers to obstetric care: cost, distance, negative past experiences, family members, and beliefs about childbirth care (Amooti-Kaguna & Nuwaha, 2000; Cham, Sundby, & Vangen, 2005). Considering “barriers beyond distance and cost,” Kowalewski, Jahn, and Kimatta (2000) explain that some Tanzanian women do not seek biomedical care due to poverty, as this condition triggers fear of discrimination by facility providers. In Uganda, Kyomuhendo (2003) also indicates that socioeconomic status structures the choice to deliver at home despite knowledge of the risks involved – some women refuse to go to a health facility for lack of cash to pay for services or proper clothing to wear.

Ethnographic studies on childbirth explore beliefs and practices in medically pluralistic settings, documenting wide variation in the care perceived as desirable and appropriate (Afsana & Rashid, 2001; Davis-Floyd & Sargent, 1997; El-Nemer, Downe, & Small, 2006; Jordan, 1993; Kaufert & O'Neil, 1993; Obermeyer, 2000; Roth-Allen, 2004). Only a few studies consider the impact of inequalities on care seeking or treatment. According to Sargent (1982), inequitable distribution of material resources in Benin is as relevant to childbirth decision-making as societal values such as modesty, courage, and trust. A study in Bangladesh describes how material status influences the quality of emergency obstetric care (Pitchforth, van Teijlingen, Graham, Dixon-Woods, & Chowdhury, 2006). Van Hollen (2003) examines medicalization of birth among poor women in South India, while Whittaker (1999) looks at childbirth choices amidst unequal State-citizen relations in Thailand. In the U.S., Lazarus (1994) shows how control over childbirth is limited for disadvantaged women due to asymmetrical distribution of knowledge and power.

### Gaps in the evidence base

What is known about the complex workings of inequalities in relation to health behaviors and outcomes is still obscure, including what is known about use of biomedical obstetric care. Taken together, quantitative and qualitative research indicates a broad spectrum of what women want and what they can access. Existing evidence strongly suggests that choices and actions are mediated by social and material positioning. However, pathways through which this mediation takes place are not well understood. As regarded by researchers in social epidemiology and medical anthropology, the mechanisms of health disparities are difficult to pin down (Krieger, 2001; Nguyen & Peschard, 2003).

Quantitative research reveals various factors associated with obstetric care use, including the direction and strength of these relationships. But while one can speculate on the reasons, this work cannot explain why an association exists or describe how a given determinant influences behavior. On the other hand, the strength of qualitative research is its ability to achieve such analytic depth. However, studies using these methods tend to stop short at identifying barriers to care or, when offering detailed analyses, emphasize cultural practices over structural inequalities. As medical anthropologist James Young (1981) cautioned:

“...there exists a potential for disservice to the people we study when cultural barriers to the acceptance and use of Western medicine are emphasized to the exclusion of any concern with the role that externally derived economic and organizational constraints also play in decision-making... tradition focused explanations tend to put responsibility for under-use with the people and their way of life, rather than with the unequal manner in which modern medical services are made available to the poor and politically powerless” (p. 506).

A third avenue that integrates statistical patterns with local realities and personal experiences can trace some of the channels through which inequalities influence obstetric care. Identifying salient factors with quantitative analyses and using qualitative findings to interpret these results provides a more comprehensive approach to the problem. The shortage of mixed-methods research on this topic presents a major gap in the evidence base – one this study seeks to address.

## Research methods

The study setting consists of 25 villages in the adjacent Kilombero and Ulanga Districts of south-central Tanzania's Morogoro Region. These villages comprised the rural component of the Ifakara Demographic Surveillance Site (DSS), a census administrated by the Ifakara Health Institute (IHI) that routinely collects data on demographic and health-related events. The geography of this area, known as the Kilombero Valley, is African savannah with alternating dry and rainy climates throughout the year. Its inhabitants include established ethnic groups of Pogoro, Ndamba, Bena, and Hehe as well as semi-nomadic groups such as Sukuma and Maasai. Most people earn their living through agriculture, fishing and petty trading, with a majority of families traveling to farms with second homes (*shamba*) during the long rains. Christian, Muslim, and indigenous practices are prevalent throughout.

At the time of fieldwork, the study population was nearly 94,000 people. Total fertility rate was estimated at 5.3 births per woman and the maternal mortality ratio at 500 deaths per 100,000 live births. Approximately 49% of deliveries occurred at home, while 51% took place in facilities (M. A. Mwanyangala from IHI, personal communication, May 15, 2008). A patchwork of government and private (mission) facilities provided biomedical obstetric care to the area, including two district hospitals, two village health centers, and 11 dispensaries. Hospitals were located in the area's two towns and were the only facilities that could perform surgery. The smaller facilities were located in villages and provided services for uncomplicated deliveries; health centers had an ambulance and a greater physical capacity than dispensaries but the level of care at these facility types was similar, whether public or private.

A concurrent triangulation design was employed for this study that assigns equal weight to quantitative and qualitative components. This design is used when a researcher conducts these methods simultaneously to triangulate the phenomenon of interest, to compare findings obtained in a single time frame from different vantage points (Tashakkori & Teddlie, 1998). The research

team that collected the quantitative data obtained informed consent according to their own study protocols. Informed consent for the qualitative component was obtained by giving verbal and written explanations of the study to all potential participants and documenting consent from those who agreed to participate (written consent was obtained for women participating in in-depth interviews). Ethical approval for the study was provided by the Office of Human Research Ethics at the University of North Carolina in the U.S., and IHI, the National Institute for Medical Research, and the Commission for Science and Technology in Tanzania.

## Quantitative data and analysis

Data for the quantitative component derive from two sources. The Postpartum Interview (PPI) Study was a retrospective, population-based census conducted by IHI and the U.S. Centers for Disease Control and Prevention. This study contains information on maternal-newborn health outcomes and practices during pregnancy and postpartum. The aim was to interview all women living in the DSS area who had a pregnancy outcome within 42–60 days of this outcome. Preliminary PPI data used in this analysis were collected from November of 2007 through June of 2008, and included living participants with pregnancy outcomes after five months gestation. The second data source was the Ifakara DSS, from which household-level data were used for occupation, household assets, and proximity to obstetric services. These data were collected in October to December of 2007 and May to July of 2008.

Descriptive statistics explored patterns of obstetric care use in the sample. A logistic regression model was estimated with Stata 10 to examine the independent effects of social and material status on obstetric care use while controlling for potential confounders. Variables were included in the model due to theoretical importance and findings from other studies. Control variables not significant at the  $p < 0.10$  level were excluded from the model except for fever, which was retained because it was part of a grouping of three distinct variables on perceived complications that made up a descriptive whole. To correct for intracluster correlation, robust estimates of variance were obtained using household as the primary sampling unit.

In these analyses, use of biomedical obstetric care refers to whether a woman received or sought delivery care at a health facility. Biomedical care did not typically occur in homes and, while traditional birth attendants (TBAs) occasionally attended births in dispensaries, facilities represented a particular care associated with modern medicine. Because the critical outcome involved decisions and behaviors related to this care, use was defined as delivery in a facility or on the way to one. Most independent variables are self-explanatory but a few deserve clarification. Ethnicity included the dominant (most numerous) indigenous group, secondary groups, and minority groups. Head of household's occupation was collapsed into one category for farmers and another for those with small businesses or formal employment. Material status was measured with key household assets, including roofing material and radio. Proximity to obstetric care was measured in minutes walking to the nearest facility. Last, community-level variables included district of residence and residence in a village with a health facility.

## Qualitative data and analysis

Data for the qualitative component of this study were collected September 2007 through June 2008 using participant observation and in-depth interviews. Participant observation took place throughout the study setting but focused on three central villages in each district and included women ages 14 and up with prior

childbirth experience as well as adult family members, providers of childbirth care (facility staff and TBAs), and local health officials. Over ten months of fieldwork the principal investigator, a nurse-midwife, engaged in daily discussions regarding childbirth at people's homes, work places (fields and markets), health facilities, and government offices. She also volunteered clinical skills two days a week at the district hospital and in village health facilities, where antenatal, intrapartum, and postpartum care were observed and provided. Key consultants facilitated such activities, organizing entrée into village life and offering perspectives on observations and interactions. Jottings taken during all these encounters were systematically incorporated into a growing body of fieldnotes that facilitated the development of deeper understandings, which fed back into subsequent participant observation and analysis conducted in the field.

In-depth, semi-structured interviews were conducted with 48 women who delivered within the previous six months. Interviewees were identified primarily from the PPI and DSS datasets by sociodemographic characteristics and a scale of material (household-level) assets. Potential participants were split by district of residence and delivery type, where half used obstetric care and half did not. The groups were then further stratified by material status. Finally, variation on other sociodemographic characteristics was achieved within each quadrant. Fig. 1 presents a visual model of this stratified purposeful sampling.

Interview questions were honed to reflect insights gained from previous interviews and participant observation, but general topics remained the same throughout data collection. These topics included childbirth stories, views of available childbirth services, perceptions of inequality and its effects on obstetric care use, and conceptualizations of childbirth and risk. All interviews were conducted in Swahili and recorded with a digital audio-recorder. Digital recordings were translated and transcribed within two weeks, and notes taken during interviews were attached to these transcripts.

Initial qualitative analysis was performed in conjunction with ongoing data collection. Specifically, this analysis involved generating hypotheses through fieldnote writing, testing these ideas during participant observation and interviews, and revising evolving understandings to fit the most recent observations. This iterative process was repeated until the model demonstrated a high degree of consistency with respect to new observations and interactions (see Denzin, 2009 for a complete description of this approach). A final analysis was conducted after leaving the field. First, all fieldnotes and transcripts were re-read chronologically in order to get an overall sense of the work. Using the qualitative software program HyperRESEARCH, these datasets were then indexed according to the most recent categories generated in the field. Last, indexed categories (now

**Table 1**  
Descriptive statistics for use of biomedical obstetric care ( $n = 1150$ ).

Variable	<i>n</i>	%
Used obstetric care	731	63.57
Delivered in a health facility	668	58.09
Delivered on the way	63	5.48
Did not use obstetric care	419	36.43
Delivered with a professional provider	624	54.26
Delivered with a non-professional provider	526	45.74

called themes) and their relationships to each other were refined and detailed descriptions written.

*Integration of methods*

Integration of quantitative and qualitative components occurred at three points. First was the use of PPI and DSS data in selecting participants for in-depth interviews. The second point occurred during quantitative analysis, where understandings from qualitative findings influenced choices involving statistical variables. The final point of crossover occurred in the interpretation of study findings. At this juncture, results from each component were interpreted in light of each other in an attempt to discern a more complete picture of obstetric care use.

**Results**

*Patterns of care use*

After merging data from the PPI survey and Ifakara DSS, the total sample size was 1155. Of these women, 99.57% received some antenatal care. The five that did not were dropped from the dataset after ensuring no systematic differences existed between them, bringing the final study sample size to 1150. Patterns of delivery care use are shown in Table 1. Nearly 64% of women used biomedical obstetric care. These women either delivered in a health facility ( $n = 668$ ) or had decided to but instead delivered on the way to a facility ( $n = 63$ ). Delivery place usually corresponded with provider type but not always, a finding supported by the qualitative data. For example, of the 668 women who delivered at a health facility, 624 reported being attended by a biomedical provider.

Table 2 shows the characteristics of the total sample as well as characteristics of women using biomedical obstetric care. The mean age was 26 years and mean parity was four children. Most women were married or in a consensual union (83%) and living in households that relied on farming (85%). Just over half of women completed primary schooling (57%), and more lived in households with a radio (71%) and a thatched (65%) versus iron (35%) roof.

Women using biomedical obstetric care	Women not using biomedical obstetric care
Participants in the upper 50 <sup>th</sup> percentile of the household assets scale	Participants in the upper 50 <sup>th</sup> percentile of the household assets scale
Variation on age, parity, ethnicity, religion, marital status, education (each quadrant)	
Participants in the lower 50 <sup>th</sup> percentile of the household assets scale	Participants in the lower 50 <sup>th</sup> percentile of the household assets scale

**Fig. 1.** Stratified purposeful sampling for in-depth interviews.

**Table 2**  
Characteristics of the sample (n = 1150).

Categorical variable	Total sample		Sample using biomedical obstetric care	
	n	%	n	%
Ethnicity				
Dominant group	274	23.83	182	66.42
Secondary groups	607	52.78	398	65.57
Minority groups	269	23.39	149	55.39
Religion				
Christian	775	67.39	477	61.55
Muslim	344	29.91	239	69.48
Traditional	31	2.70	13	41.94
Marital status				
Unmarried	197	17.13	134	68.02
Married/consensual union	953	82.87	595	62.43
Education				
No education	181	15.74	103	56.91
Some primary school	312	27.13	181	58.01
Complete primary school or higher	657	57.13	445	67.73
Occupation for head of household				
Farming	979	85.13	606	61.90
Small business	171	14.87	123	71.93
Household assets				
Thatch roof	752	65.39	439	58.38
Iron roof	398	34.61	290	72.86
No radio	338	29.39	196	57.99
Radio	812	70.61	533	65.64
Proximity from home to health facility				
Up to 30 min	434	37.74	345	79.49
30 to 60 min	397	34.52	239	60.20
60 min or greater	319	27.74	145	45.45
District of residence				
Kilombero	615	53.48	348	56.59
Ulanga	535	46.52	381	71.21
Health facility in village of residence				
No health facility	514	44.70	277	53.89
Health facility	636	55.30	452	71.07
Antenatal referral for facility delivery				
Not referred	590	51.30	342	57.97
Referred	560	48.70	387	69.11
Perceived problems				
Labor lasting too long	294	25.57	239	81.29
Excessive bleeding	133	11.57	99	74.44
Fever	409	35.57	252	61.61
Continuous variable	Mean		Mean	
Age	26.32		25.92	
Parity	3.65		3.35	
Month of first antenatal care visit	5.02		4.89	

**Table 3**  
Logistic regression model estimating the likelihood of obstetric care use in Kilombero Valley, Tanzania: odds ratios based on model parameter estimates (n = 1150).

Categorical variable	Odds ratio (robust standard error)	95% Confidence interval
Ethnicity		
(Dominant group)		
Secondary groups	1.68**	1.12, 2.54
Minority groups	0.96	0.62, 1.48
Religion		
(Christian)		
Muslim	1.27	0.89, 1.79
Traditional	0.77	0.30, 1.99
Marital status		
(Unmarried)		
Married/consensual union	1.07	0.71, 1.61
Education		
(No education)		
Some primary school	0.87	0.56, 1.34
Complete primary school or higher	1.39*	0.94, 2.07
Household head's occupation		
(Farming)		
Small business	1.24	0.83, 1.86
Household assets		
(Thatch roof)		
Iron roof	1.57***	1.15, 2.13
(No radio)		
Radio	1.32*	0.97, 1.79
Proximity from home to health facility (Up to 30 min)		
30 to 60 min	0.45***	0.31, 0.64
60 min or greater	0.26***	0.18, 0.38
District of residence		
(Kilombero)		
Ulanga	2.40***	1.62, 3.55
Health facility in village of residence		
(No health facility)		
Health facility	1.44**	1.03, 2.02
Antenatal referral for facility delivery		
(Not referred)		
Referred	1.99***	1.47, 2.70
Perceived problems		
Labor lasting too long	3.13***	2.17, 4.53
Excessive bleeding	1.75**	1.01, 3.02
Fever	0.80	0.60, 1.09
Continuous variable	Odds ratio (robust standard error)	95% Confidence interval
Parity	0.86***	0.81, 0.92
Month of first antenatal care visit	0.86***	0.78, 0.95

\*p < 0.10 level, \*\*p < 0.05 level, \*\*\*p < 0.01 level.

Almost half the women (49%) were referred for a facility delivery during antenatal care. A sizeable proportion of women reported one or more problems during the delivery, including labor that lasted too long (26%), excessive bleeding (12%), and fever (36%).

*The likelihood of care use and ethnographic findings*

Table 3 shows adjusted odds ratios based on the logistic regression model fit to explore factors that influence use of biomedical obstetric care. Age and parity were highly collinear (r = 0.52). As parity was the more relevant factor to control for in a study focusing on care use at delivery, age was omitted from the model. Compared to women in the dominant ethnic group, those in a secondary group were more likely to use care (OR = 1.68, 95% CI = 1.12, 2.54). The ethnographic data revealed a social stigma attached to Pogoro ethnicity despite its being the most numerous group. Social exclusion/inclusion for other ethnicities was highly variable, with some groups widely renowned for education or a strong work ethic and others existing at the farthest margins of society. Religion

was not important; the effect of being Muslim in bivariate analysis was attenuated when controlling for district of residence.

Education was marginally significant. Women with complete primary school or higher were somewhat more likely to use obstetric care than those with none (OR = 1.39, 95% CI = 0.94, 2.07). On the other hand, parity demonstrated a strong inverse relationship with obstetric care use (OR = 0.86, 95% CI = 0.81, 0.92). These effects likely reflect some amalgamation of age, education, and experience. Qualitative findings also suggested the influence of self-identity. When they could, younger women with more education used health facilities partly as a way to enact a modern identity and lifestyle, while older, less educated women stayed at home partly as a function of past experience and habit.

Head of household's occupation had no effect. Ethnographic findings showed this factor had little to do with an individual woman's material status if the household head was someone other than the woman herself. There was no assurance that the wealth of a household head would reach a pregnant woman, as women were typically not involved in decisions regarding income generated by

men or the family as a collective. However, many women had income-generating activities of their own. For example, a rice farmer may have a business-savvy wife who brews beer or farms vegetables and sells these goods in the market. This woman may or may not give her earnings to her husband – but when possible she invested them in her children's education or household goods and improvements. Thus, household assets were somewhat better indicators of a woman's material wealth than head of household's occupation. Women living in a house with an iron roof were more likely to use obstetric care than those in houses with thatched roofs (OR = 1.57, 95% CI = 1.15, 2.13), as were women in houses with radios than those in houses without (OR = 1.32, 95% CI = 0.97, 1.79).

Distance and place-based effects in the model were predictably strong. Compared to women living within 30 min of a health facility, those living 30–60 min away were much less likely to use obstetric care (OR = 0.45, 95% CI = 0.31, 0.64), as were those over 60 min away (OR = 0.26, 95% CI = 0.18, 0.38). Community-level variables were also important; women in Ulanga had an estimated odds of using care that was over two times higher than those in Kilombero (OR = 2.40, 95% CI = 1.62, 3.55). While both districts had one hospital and health center, Ulanga had seven dispensaries and Kilombero had four. In Ulanga, 68% of women lived in a village with a health facility, compared to 31% in Kilombero. Women in a village with a facility were more apt to use care than those in a village without one (OR = 1.44, 95% CI = 1.03, 2.02). Only two villages deviated from this pattern; qualitative findings revealed that the dispensary in one village had providers known to be extremely neglectful and corrupt, while the other village hosted a number of especially active, well-trusted TBAs.

Gestational month of first antenatal care visit had an inverse association with obstetric care use (OR = 0.86, 95% CI = 0.78, 0.95). Women referred to deliver in a health facility during antenatal care were more likely to use obstetric services than women not referred (OR = 1.99, 95% CI = 1.47, 2.70). Perception of problems during labor was also associated with care use. Women who reported long labor or excessive bleeding were more likely to use care than women who did not (OR = 3.13, 95% CI = 2.17, 4.53 and OR = 1.75, 95% CI = 1.01, 3.02, respectively). Perception of fever did not affect use, likely because Swahili for fever (*homa*) often refers to a more general condition of malaise that any woman in labor might experience.

#### *In-depth interviews and participant observation*

All 48 women invited for an interview agreed to participate. Interviews conducted with women using obstetric care totaled 24, including 12 relatively well-off women and 12 who were poor. Interviews with women not using this care also totaled 24, but with eight well-off women and 16 who were poor (the former delivered at home for relatively straightforward reasons, while this behavior among the latter was more complex and required more information). Nearly every woman knew someone who had died in childbirth. Many had themselves experienced obstetric hemorrhage, prolonged labor, a malpositioned fetus, or postpartum infection. Such personal knowledge instilled a prevailing and practical sense of danger and vulnerability that led the majority of women to believe it safer to give birth in a health facility than at home. Despite this common perception, however, unequal circumstances converged to create diverse decisions and actions in relation to childbirth care.

#### *Relatively well-off women using biomedical obstetric care*

Women who were materially well-off used obstetric care according to themes of risk perception, self-identity, and accessibility. Not only did they see childbirth as dangerous, but they also believed their local facility could and would help them in the event of a complication. Most had greater confidence in hospitals than health

centers or dispensaries but still viewed the care at smaller facilities as adequate. Confidence in TBAs was generally low; women in this group appreciated the role of these providers but expressed distrust in their ability to handle problems. It is important to note that preference for facility delivery did not automatically coincide with this behavior. Although these women preferred biomedical care, they were also able to physical access and afford these services.

Younger women with higher education often explained their choice with, "it is what contemporary women (*wanawake wa kisasa*) do." This self-identification with a modern female type was a strong motivator to seek obstetric care. Regardless of age or education, women in this group made an effort to dress up before going to a facility. Appearing in a new outfit marked a woman as socially valued – clean, modern, respectful, and from a family who can afford her care (even if she herself generated the income to create this appearance). Such presentation was critical because it improved the chances of receiving the best care available. These women often tipped their care providers and brought a number of items for delivery known as *vifaa*: gloves, soap, a basin, a razor sterile needles, syringes, thread, cotton wool, one to three pieces of new cloth (*kanga*), and sometimes disinfectant or kerosene.

#### *Relatively well-off women not using biomedical obstetric care*

Women in this quadrant shared the risk perceptions and identity values of women in the preceding group but differed on a few key factors – the most obvious of which was physical access. With its haphazard timing, childbirth can be unpredictable. The immediate and uncertain nature of this event, combined with distance to and distribution of facilities, left some women who would otherwise use obstetric care unable to reach it. Most women simply did not get to a facility in time, especially during the rainy season. The majority had a TBA or relative assist them at home, but two delivered on the way to a facility and one delivered at home alone. A second access issue for two women was lack of decision-making power. Women typically had some say in their childbirth care but would occasionally deliver with a TBA at the sole discretion of a husband or other authoritative family member.

Another theme differentiating these well-off women from those using care was previous childbirth experience. Older women who had successfully delivered at home in the past were not terribly preoccupied with their current place of delivery. Although these women saw childbirth as dangerous and insisted they preferred facilities, some were not concerned *enough* to seek care there. Only one woman distrusted the biomedical services available to her. The very few women I encountered overall with this concern were usually from urban areas outside of the Kilombero Valley and were able to recognize the limitations of rural health care.

#### *Relatively poor-off women not using biomedical obstetric care*

Several themes merged to explain why poor women did not use obstetric care. Distance decision-making power also created problems for these women. However, even when they lived close to facilities or headed their own household, many delivered at home. First was the issue of affordability. Mission facilities charged a fee ranging from 3000 to 10,000 Tanzanian shillings about \$2.30 to \$7.70 USD for uncomplicated deliveries. Government facilities could not charge official fees for childbirth but most providers expected a "thank you" (*asante*) of 3000–5000 Tsh. In addition, the *vifaa* could cost up to 25,000 Tsh. Finally, transportation costs were not unusual and could be as high as 45,000 Tsh if an ambulance was used. Given the local economic context, these costs could be substantial, sometimes requiring a family to incur debt in order to cover the various expenses. In contrast, delivery at home was relatively cheap. Although TBAs expected a small payment, it could be paid in kind – a bag of beans after harvest, some eggs or



a chicken when a family could afford it. Transportation was less of an issue and, while TBAs appreciated a pair of gloves or bit of soap, most did not have strict requirements regarding *vifaa*.

Women in this group also worried about how they would be treated at a facility. If they looked dirty (poor), lacked *vifaa*, or could not afford *asante*, they might face abuse, neglect, or humiliation from providers. Some of these women delivered alone in facilities or with female relatives. Others were turned away at the door. This treatment provoked shame in poor women. Health facilities were public spaces and what occurred there became a matter of public knowledge; social standing was diminished when poverty was made evident. Other features that could put women at risk for mistreatment were ethnicity or family. A stigma on Pogoro and other groups (typically enacted by persons from more urban areas such as facility providers) increased susceptibility to substandard treatment. Women with male partners reputed as lazy or frequently drunk might also suffer. In contrast to *wanawake wa kisasa*, women in lower positions often self-identified as *mwenzangu na mimi*, or “people like me.” Most felt their local facility *could* help in the event of a complication but were uncertain of whether it *would*.

Women in this quadrant openly discussed their conceptualizations of childbirth and risk, where supernatural etiologies were not uncommon. But because symptoms resulting from a curse could usually be treated in facilities, problems stemming from witchcraft did not necessarily prevent or delay women from seeking biomedical care. Only a few women felt that going to a facility could endanger them; not because they doubted the quality of the services but because presenting at a facility might alert jealous neighbors to their vulnerable condition, who might then work witchcraft to complicate the labor. It was unclear whether better-off women shared these beliefs – wealthier, more educated women who claimed a modern identity were reluctant to talk about such matters and a few expressed disdain at witchcraft ideation.

#### *Relatively poor-off women using biomedical obstetric care*

A number of facilitators came into play for these women, who had to overcome all of the above deterrents in order to use obstetric care. Some had a relative working at a health facility, an advantage that enabled them to get fair treatment despite being poor. Others were referred for facility delivery by their antenatal care provider or had a family highly supportive of modern medicine. Most women lived within reasonable distance to a facility. But two particularly strong motivators assisted those without such advantages. The first was risk perception. Whether from previous experience, perceived problems, or some other source, these women viewed childbirth as acutely and personally dangerous. Although aware their treatment might be substandard, they opted to go to a facility anyway with the prospect they *might* get help should they need it.

The second major motivator was the desire some women had to identify as *wanawake wa kisasa* – to act and appear modern. In some cases, an identity involving notions of modernity overcame one defined by social positioning, wealth, and shame. Even though poor, some of these women could hardly conceive of giving birth at home – an attitude especially likely for women with complete primary education. Somewhere in-between *wanawake wa kisasa* and *mwenzangu na mimi*, they would put on the best clothes they had, gather together whatever *vifaa* they could, and proceed to the facility hoping for the best.

## Discussion

Women's use of biomedical obstetric care in rural south-central Tanzania results from a complex interplay of influences. Quantitative results identify statistical patterns associated with this behavior while qualitative findings reveal the pathways through

which these effects operate. Statistical analyses indicate that ethnicity, education, household assets, and parity are important predictors of care use – independent of distance to facilities, antenatal care factors, and perceived problems in labor. Ethnographic findings help to explain the multiple and overlapping processes that involve these factors, including mechanisms of affordability, risk perception, and more nuanced dynamics of social positioning, past experience, entitlement, shame, and self-identity. Results from the two study components did not converge seamlessly. The modest effects of household assets did not exactly match ethnographic conclusions on the high importance of relative wealth. This finding may reflect inherent difficulties of measuring material wealth in resource-poor contexts.

The most crucial findings of the study involved *how* social and material positioning shaped decisions and behaviors related to biomedical obstetric care. The predominant perception of childbirth as a risk and related preference for facility delivery fractured into divergent actions conditioned by unequal physical, social, and economic circumstances. Women who could get to care frequently did so, as evidenced by the strong effects of proximity and place-based factors. But a variety of steep material, social, and emotional costs were also major deterrents. Outside of official or unofficial fees, shame alone was enough to convince some women to deliver at home. Uncertainty over whether safe care at facilities would be available (to them) confirmed this decision for many more. Intricately woven into this positioning was self-identity and its resulting self-censuring behavior, which functioned hand-in-hand with other determinants. In the end, the question was whether obstetric care is worth the cost of getting it. If the woman weighing this decision was poor or otherwise excluded, the pragmatic response was frequently no.

The effects of a few other factors were confirmed and explained by this study. Antenatal referral facilitated care use; women instructed by an authority figure (i.e. biomedical provider) to deliver at a health facility were more likely to do so than women not referred. Not only did referral give women time to prepare, it also heightened their sense of risk. Abnormally long labor and excessive bleeding also prompted women to seek obstetric care, implying that women were aware of symptoms indicative of a complication. Irrespective of wealth and education, women seemed quite savvy of danger signs in childbirth – a conclusion reached by a study in Malawi as well (Rosato et al., 2006).

Issues involving the quality of obstetric care also emerged. Both facility supplies and providers' clinical skills were highly varied in the study setting. This lack of standardized care likely contributed to a number of “near-miss” events observed during fieldwork. Although most women were unable to assess the quality of clinical care, the manner in which they were treated fed into future decisions for childbirth. This issue was widely acknowledged as a problem. Public, nationally-distributed documents such as newspaper articles and Ministry of Health reports cite concerns over “self-discipline” and “commitment” among obstetric providers (Ministry of Health and Social Welfare, 2008; Nabeta, 2008). Qualitative studies in other parts of the country also disclose this problem (Kowalewski et al., 2000; Roth-Allen, 2004). Nonetheless, much more work is needed to delineate the influence of socioeconomic status on quality of care and maternal outcomes in health facilities.

The chief constraint of the quantitative component was availability of data. The data used did not include information on women's autonomy, measures of individual wealth, and obstetric history items like previous complications and past use of obstetric care. As with any research involving primary data collection in a setting foreign to investigators, the main limitation of the qualitative component involved communication. Although every effort was made to handle this problem, minor misunderstandings were still possible.

## Conclusion

This study makes inroads toward understanding how inequalities affect health-related action. Women in poor countries are not passive, homogenous beings that uniformly seek and receive obstetric care once supplied. Nor are they oppressed victims who lack the capacity to act and decide. Rather, as individual agents differentially positioned according to multiple markers of power, they negotiate between deterrents and motivators in immediate circumstances to secure the best care they can. They perceive, desire, experience, and interpret obstetric care in different ways and for different reasons, most of which are inextricably tied to relative positioning in family and community. Women may want to deliver in facilities, *but not at the expense of their social, material, and emotional well-being*. Therefore, the assumption that all women want biomedical obstetric care must be tempered by a recognition that they do not want it at any cost – and that those with the highest costs are often the most marginalized.

A comprehensive understanding of how childbirth processes play out in specific settings can lead to more effective maternal-newborn policies and programs. This occurs by identifying relevant differences among women, unraveling how these differences affect obstetric care use, and then crafting interventions that increase access for those who are disadvantaged. Priorities for maternal health in the Kilombero Valley might include the following: Lack of accountability in the health care system should be corrected – providers must be dissuaded from demanding illegal payments and engaging in discriminatory behavior. Supply of basic *vifaa* should be restored to all women in a manner that ensures fair distribution. On a broader scale, issues of physical access to facilities and women's access to income and education need to be addressed. But in the meantime, community-based interventions can be considered that specifically target women who are often deprived of care, such as community-level distribution of family planning, antibiotics or uterotonic drugs (Pagel et al., 2009; Prata, Sreenivas, Vahidnia, & Potts, 2009). All efforts should incorporate community participation in order to promote transparency and sustain links between villages and health facilities – an approach successfully implemented in northwest Tanzania (Ahluwalia, Schmid, Kouletio, & Kanenda, 2003).

With resources being invested to achieve MDG-5, now is the time to realize that interventions focused on obstetric service supply, while necessary, are not sufficient. Aside from improving quality of care, what is needed are better approaches to services delivery (Gwatkin, Wagstaff, & Yazbeck, 2005) and to generate these, we need better research – more mixed-methods studies that explicitly evaluate the effect of disadvantage on use of and access to health services. Strategies based on inadequate knowledge of women's lives, or those that assume universal ideals regarding women's desires and capabilities, tend to be ineffective. As Roth-Allen (2004) puts it (citing Abu-Lughod, 1993), such “trafficking in generalizations” leads to generic policies and programs that erroneously assume what works for one third world woman will likely work for another.

Unequal power relations structure agency relative to childbirth and shape, to a large extent, the kind of services women can access. According to Macintosh (2001), “social inequality directly shapes inequitable health care systems” (p. 187). If increasing availability of obstetric care systematically favors better-off groups, implementation of this strategy may be supporting uneven and inequitable outcomes. To improve use of services, interventions aimed at increasing availability of skilled attendance should explicitly focus on improving access for women who are frequently excluded from social and economic opportunity. Feminist scholars Parpart and Marchand (1995) call for an approach to development that

“acknowledges differences, searches out previously silenced voices, and recognizes the need for multiple interpretations and solutions” (p. 12). Taking care to understand women's lives as varied as well as valuable, the approach to maternal health should do the same.

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## References

- Able-Smith, B., & Rawal, P. (1992). Can the poor afford 'free' health services? A case study of Tanzania. *Health Policy and Planning*, 7(4), 329–341.
- Abu-Lughod, L. (1993). *Writing women's worlds: Bedouin stories*. Berkeley and Los Angeles: University of California Press.
- Afsana, K., & Rashid, S. F. (2001). The challenges of meeting rural Bangladeshi women's needs in delivery care. *Reproductive Health Matters*, 9(18), 79–89.
- Ahluwalia, I., Schmid, T., Kouletio, M., & Kanenda, O. (2003). An evaluation of a community-based approach to safe motherhood in northwestern Tanzania. *International Journal of Gynecology & Obstetrics*, 82, 231–240.
- Amooti-Kaguna, B., & Nuwaha, F. (2000). Factors influencing choice of delivery sites in Rakai district of Uganda. *Social Science & Medicine*, 50, 203–213.
- Anwar, A. I., Killewo, J., Chowdhury, M.-E.-E. K., & Dasgupta, S. K. (2005). Bangladesh: inequalities in utilization of maternal health care services – evidence from Matlab. In D. R. Gwatkin, A. Wagstaff, & A. S. Yazbeck (Eds.), *Reaching the poor with health, nutrition, and population services: What works, what doesn't, and why* (pp. 117–136). Washington, DC: The World Bank.
- Bloom, S. S., Wypij, D., & Das Gupta, M. (2001). Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. *Demography*, 38(1), 67–78.
- Cham, M., Sundby, J., & Vangen, S. (2005). Maternal mortality in the rural Gambia, a qualitative study on access to emergency obstetric care. *Reproductive Health*, 2(3), 1–8.
- Davis-Floyd, R., & Sargent, C. F. (1997). The anthropology of birth. In R. Davis-Floyd, & C. F. Sargent (Eds.), *Childbirth and authoritative knowledge* (pp. 1–54). Berkeley: University of California Press.
- Denzin, N. K. (2009). *The research act: a theoretical introduction to sociological methods*. Rutgers, New Jersey: Transaction Publishers.
- El-Nemer, A., Downe, S., & Small, N. (2006). 'She would help me from the heart': an ethnography of Egyptian women in labour. *Social Science & Medicine*, 62, 81–92.
- Glei, D. A., Goldman, N., & Rodriguez, G. (2003). Utilization of care during pregnancy in rural Guatemala: does obstetrical need matter? *Social Science & Medicine*, 57, 2447–2463.
- Gwatkin, D. R., Bhuiya, A., & Victoria, C. G. (2004). Making health systems more equitable. *The Lancet*, 364, 1273–1280.
- Gwatkin, D. R., Wagstaff, A., & Yazbeck, A. S. (2005). *Reaching the poor with health, nutrition, and population services: What works, what doesn't, and why*. Washington, DC: The World Bank.
- Houweling, T. A. J., Ronsmans, C., Campbell, O. M. R., & Kunst, A. E. (2007). Huge poor-rich inequalities in maternity care: an international comparative study of maternity and child care in developing countries. *Bulletin of the World Health Organization*, 85, 745–754.
- Jordan, B. (1993). *Birth in four cultures* (4th ed.). Long Grove, Illinois: Waveland Press, Inc.
- Kaufert, P. A., & O'Neil, J. (1993). Analysis of a dialogue on risks in childbirth: clinicians, epidemiologists, and Inuit women. In S. Lindenbaum, & M. Lock (Eds.), *Knowledge, power, and practice: The anthropology of medicine and everyday life* (pp. 32–54). Berkeley: University of California Press.
- Kowalewski, M., Jahn, A., & Kimatta, S. S. (2000). Why do at-risk mothers fail to reach referral-level? Barriers beyond distance and cost. *African Journal of Reproductive Health*, 4(1), 100–109.
- Kowalewski, M., Mujinja, P., & Jahn, A. (2002). Can mothers afford maternal health care costs? User costs of maternity services in rural Tanzania. *African Journal of Reproductive Health*, 6(1), 65–73.
- Krieger, N. (2001). Theories for social epidemiology in the 21st century: an ecosocial perspective. *International Journal of Epidemiology*, 30, 668–677.
- Kyomuhendo, G. B. (2003). Low use of rural maternity services in Uganda: impact of women's status, traditional beliefs and limited resources. *Reproductive Health Matters*, 11(21), 16–26.
- Lazarus, E. S. (1994). What do women want? Issues of choice, control, and class in pregnancy and childbirth. *Medical Anthropology Quarterly*, 8(1), 25–46.
- Macintosh, M. (2001). Do health systems contribute to inequalities? In D. Leon, & G. Walt (Eds.), *Poverty, inequality, and health: An international perspective* (pp. 175–193). Oxford: Oxford University Press.
- Measure DHS. (2008). Demographic and health surveys STATcompiler. <http://www.statcompiler.com/> Retrieved October 20, 2008.

- Mekonnen, Y., & Mekonnen, A. (2003). Factors influencing the use of maternal health-care services in Ethiopia. *Journal of Health, Population, & Nutrition*, 21(4), 374–382.
- Ministry of Health and Social Welfare. (2008). The national road map strategic plan to accelerate reduction of maternal, newborn, and child deaths in Tanzania 2008–2015. [http://hdptz.esealtd.com/fileadmin/documents/Key\\_Sector\\_Documents/MNCH/One\\_MNCH\\_plan.pdf](http://hdptz.esealtd.com/fileadmin/documents/Key_Sector_Documents/MNCH/One_MNCH_plan.pdf) Retrieved March 15, 2009, from.
- Mohanty, C. T. (1991). Under Western eyes: feminist scholarship and colonial discourses. In C. T. Mohanty, A. Russo, & L. Torres (Eds.), *Third world women and the politics of feminism*. Bloomington: Indiana University Press.
- Mpembeni, R. N., Killewo, J. Z., Leshabari, M. T., Massawe, S. N., Jahn, A., Mushi, D., et al. (2007). Use pattern of maternal health services and determinants of skilled care during delivery in Southern Tanzania: implications for achievement of MDG-5 targets. *BMC Pregnancy and Childbirth*, 7(29).
- Mrisho, M., Schellenberg, J. A., Mushi, A. K., Obrist, B., Mshinda, H., Tanner, M., et al. (2007). Factors affecting home delivery in rural Tanzania. *Tropical Medicine and International Health*, 12(7), 862–872.
- Nabeta, L. (2008, June 7). Why Teddy did not have to die. *Woman in Dar Es Salaam the Citizen*, p. 2.
- National Bureau of Statistics (NBS) [Tanzania], & ORC Macro. (2005). *Tanzania demographic and health survey 2004–2005*. Dar es Salaam, Tanzania: National Bureau of Statistics, ORC Macro.
- Nguyen, V.-K., & Peschard, K. (2003). Anthropology, inequality, and disease: a review. *Annual Review of Anthropology*, 32, 447–474.
- Obermeyer, C. M. (2000). Pluralism and pragmatism: knowledge and practice of birth in Morocco. *Medical Anthropology Quarterly*, 14(2), 180–2001.
- Pagel, C., Lewycka, S., Colbourn, T., Mwansambo, C., Meguid, T., Chiudzu, G., et al. (2009). Estimation of potential effects of improved community-based drug provision, to augment health-facility strengthening, on maternal mortality due to post-partum hemorrhage and sepsis in sub-Saharan Africa: an equity-effectiveness model. *The Lancet*, 374, 1441–1448.
- Parpart, J., & Marchand, M. H. (1995). Exploding the canon: an introduction/conclusion. In M. H. Marchand, & J. Parpart (Eds.), *Feminism, postmodernism, development* (pp. 1–22). New York: Routledge.
- Paul, B. K., & Rumsey, D. J. (2002). Utilization of health facilities and trained birth attendants for childbirth in rural Bangladesh: an empirical study. *Social Science & Medicine*, 54, 1755–1765.
- Pitchforth, E., van Teijlingen, E., Graham, W., Dixon-Woods, M., & Chowdhury, M. (2006). Getting women to hospital is not enough: a qualitative study of access to emergency obstetric care in Bangladesh. *Quality and Safety in Health Care*, 15(3), 214–219.
- Prata, N., Sreenivas, A., Vahidnia, F., & Potts, M. (2009). Saving maternal lives in resource-poor settings: facing reality. *Health Policy*, 89(2), 131–148.
- Ronsmans, C., & Graham, W. J. (2006). Maternal mortality: who, when, where, and why. *The Lancet*, 368, 1189–1200.
- Rosato, M., Mwansambo, C. W., Kazembe, P. N., Phiri, T., Soko, Q. S., Lewycka, S., et al. (2006). Women's groups' perceptions of maternal health issues in rural Malawi. *The Lancet*, 368, 1180–1188.
- Roth-Allen, D. (2004). *Managing motherhood, managing risk*. Ann Arbor: University of Michigan Press.
- Sargent, C. F. (1982). *The cultural context of therapeutic choice: Obstetrical care decisions among the Bariba of Benin*. Dordrecht: D. Reidel Publishing Company.
- Say, L., & Raine, R. (2007). A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. *Bulletin of the World Health Organization*, 85(10), 812–819.
- Stekelenburg, J., Kyanamina, S., Mukelabai, M., Wolfers, I., & van Roosmalen, J. (2004). Waiting too long: low use of maternal health services in Kalabo, Zambia. *Tropical Medicine and International Health*, 9(3), 390–398.
- Stephenson, R., Baschieri, A., Clements, S., Hennink, M., & Madise, N. (2006). Contextual influences on the use of health facilities for childbirth in Africa. *Public Health Matters*, 96(1), 1–10.
- Tann, C. J., Kizza, M., Morison, L., Mabey, D., Muwanga, M., Heiner, G., et al. (2007). Use of antenatal services and delivery care in Entebbe, Uganda: a community based survey. *BMC Pregnancy and Childbirth*, 7(23), 1–11.
- Tashakkori, A., & Teddlie, C. (1998) *Mixed methodology: Combining qualitative and quantitative approaches*, Vol. 46. Thousand Oaks: SAGE Publications, Inc.
- The Skilled Care Initiative. (2005). *Patterns in seeking skilled care at delivery: Household survey findings from Burkina Faso, Kenya, and Tanzania*. New York: Family Care International.
- Thind, A., Mohani, A., Banerjee, K., & Hagigi, F. (2007). Where to deliver? Analysis of choice of delivery location from a national survey in India. *BMC Public Health*, 8(29), 1–8.
- Van Hollen, C. (2003). *Birth on the threshold: Childbirth and modernity in South India*. Berkeley: University of California Press.
- Whittaker, A. (1999). Birth and postpartum in Northeast Thailand: contesting modernity and tradition. *Medical Anthropology*, 18, 215–242.
- World Health Organization. (2005). *World health report 2005: Making every mother and child count*. Geneva: World Health Organization.
- World Health Organization. (2007). *Maternal mortality in 2005: Estimates developed by WHO, UNICEF, UNFPA, and the World Bank*. Geneva: World Health Organization.
- Yanagisawa, S., Oum, S., & Wakai, S. (2006). Determinants of skilled birth attendance in rural Cambodia. *Tropical Medicine and International Health*, 11(2), 2238–2251.
- Young, J. (1981). Non-use of physicians: methodological approaches, policy implications, and the utility of decision models. *Social Science & Medicine*, 15B, 499–506.