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Delivery Care in Tanzania: A Comparative Analysis of Use and Preferences

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Summary. — Maternal mortality remains high because of low use of skilled delivery care. While governments try to lower access barriers, little is known about women's preferences. This study combines data from a survey and a choice experiment in Tanzania to compare women's preferences with real choices of delivery care. We find that less empowered women and women who delivered their latest pregnancy outside a health facility find the technical quality of care less important, which indicates that their lower use of delivery care is partly induced by their preferences. Access barriers for poor women are particularly severe with delivery complications.

Key words — safe motherhood, obstetric care, conjoint analysis, Sub-Saharan Africa, Tanzania

1. INTRODUCTION

One of the Millennium Development Goals where least progress has been made is MDG5, according to which maternal mortality rates are to be reduced by 75% between 1990 and 2015 and universal access to reproductive health is achieved (Rosenfield, Maine, & Freedman, 2006; Simwaka, Theobald, Amekudzi, & Tolhurst, 2005). Despite the launch of many initiatives, the progress required to meet these goals lags far behind, especially in Sub-Saharan Africa, where maternal mortality rates have only declined by 26% between 1990 and 2008. Currently, every two and a half minutes a woman dies in Sub-Saharan Africa, due to complications during pregnancy and childbirth (WHO, 2010).

There is, however, widespread consensus on what must be done to reduce maternal mortality. Since more than a decade ago, it is recognized that every pregnant woman should have access to skilled care during delivery, as every pregnancy is a potential risk (WHO, 1999). Especially access to and utilization of high-quality emergency obstetric care is of crucial importance (Mavalankar & Rosenfield, 2005). However, the proportion of deliveries attended by skilled health personnel in Sub-Saharan Africa has only marginally improved from 41% in 1990 to 46% in 2008 (UN-DESA, 2010). Many women give birth at home without any skilled assistance and where referral to higher level of care is often difficult or impossible in case of complications (Worell, 2001). [1] When complications occur these women end up in life-threatening conditions. It is, therefore, not surprising that most cases of maternal death occur because of obstetric complications. With 15% of all pregnant women in developing countries experiencing life-threatening obstetric complications that require emergency care (WHO, 1999), one of the central questions is why not more women decide to deliver at health facilities and hospitals, where skilled care is available. [2]

In response to the little progress in the fight against maternal mortality, several governments in Sub-Saharan Africa (Uganda, Ghana, Tanzania, among others) have implemented exemption schemes (Ensor & Ronoh, 2005) assuming that these lower women's *barriers to access* and hence increase the use of obstetric care. While in general such policies tend to increase utilization of delivery care (Ridde & Morestin, 2011), the effectiveness of such policies is probably not maximized, as some women remain reluctant to choose for high-quality obstetric care.

Several studies have highlighted the importance of traditional beliefs and cultural aspects as contributing factors for not seeking delivery care at health facilities. Sargent (1990), for example, found in rural Benin that the ideals of courage and stoicism at delivery are underscored to young girls and pregnant women. Especially women who manage to deliver without calling for assistance are esteemed. Some women may also have an aversion to delivering in health facilities. A Ugandan mother with both traditional and hospital birth experiences, for example, explained in an interview with Kyomuhendo (2003) that: "Once you go to deliver in hospital you are treated like a child or a fool, in total disregard of your age, experience and status."

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To improve our understanding of women's choices, we therefore need to make a distinction between what they *want* to choose and what they are *able* to choose. Women may be willing to use high-quality obstetric care but often do not have the means for this; equally possible, they may not be willing to use high-quality obstetric care even if they are able to do so. Consequently, the effectiveness of policies that lower access barriers may be hampered if the low use of health care services is in part the result of women's preferences. To optimize government's policies, a comparative analysis of women's use of delivery care services and their preferences for these services is therefore much needed. This is the main research objective of our study.

While exemption schemes aim to lower wealth-related access barriers to delivery care, it should be noted that access barriers may also be the result of non-economic factors, such as low female empowerment, distance to health facilities, and delivery complications. These barriers may be lowered by interventions that empower women (Gage, 2007; Grown, Gupta, & Pande, 2005; WHO, 2005), maternity waiting homes (Mahler, 1987), or domiciliary care practices (Koblinsky *et al.,* 1999), combined with a reliable support system for emergencies (Bergström & Goodburn, 2001). But here again the effectiveness of such policies may be influenced by women's preferences for delivery care. Therefore, the comparative analysis of women's preferences and use of delivery care that we present in this paper, does not only focus on wealth, but also analyzes the role of female empowerment, distance to health facilities, and complications (details of our research design are presented in Section 3).

The area of study is Tanzania. Maternal mortality rates in this country have declined by an estimated annual rate of only 0.6% since 1990 (WHO, 2010). This is far too little to reach the MDG5, for which an average annual decline of 5.5% between 1990 and 2015 is needed. Maternal mortality rates remain high because 54% of Tanzanian women do not have a skilled birth attendant present at delivery (NBS, 2005) and less than 60% of deliveries with expected complications are delivered in emergency obstetric care facilities (Olsen, 2009). The Tanzanian government is very aware of this problem and aims to increase the coverage of deliveries by skilled assistance. For this, it has implemented an exemption scheme, by which it tries to achieve that the majority of pregnant women receive free-of-charge services, drugs, medical supplies, and transportation (Quijada & Comfort, 2002).

2. RELATED LITERATURE

In this section, we embed our study into the existing literature. We first look at the broader health care seeking literature, where several conceptual models have been developed. Two such theoretical models have wide currency in the socio-medical sciences (Pescosolido, 1992): the "health belief model" (Becker, 1974) which focuses on the social psychology of decision making, including beliefs and perceptions of individuals, and the "socio-behavioral model," which focuses on health system factors, population determinants (predisposing characteristics, enabling resources and need), and health behavior (Andersen, 1968, 1995; Andersen & Newman, 1973). It is the latter model that comes closest to the choice modeling approach that we follow in our analyses. We conceptualize individual choice as an optimization problem in which women choose the option from an "alternative set" (i.e., the set of available alternatives) that maximizes their utility. This implies that women have preferences for particular attributes of health care, but at the same time face certain constraints that limit their alternative set.

Choice modeling studies can be broadly classified into two main classes, based on the methodological approach used. A first group of studies look at individual choices, making use of observational data on service use (e.g., Addai, 2000; Gage, 2007; Magadi, Madise, & Rodrigues, 2000). A second group of studies analyze "stated preferences," which are obtained by choice experiments that elicit individual preferences for particular services (e.g., Duong, Binns, & Lee, 2004; Kruk, Paczkowski, Mbaruku, Pinho, & Galea, 2009a).[3] Although the literatures on both approaches have developed separately and to this day remain little connected, one could actually combine both approaches. This allows us to make a distinction between what women *want* to choose and what they *eventually choose*. As studies of stated preferences use hypothetical scenarios, they are not restricted to alternatives that fall within the alternative set, i.e., the alternatives that are reachable given one's constraints. Consequently, a comparative analysis of preferences and delivery care use provides insights into the importance of access barriers and preferences.

Not only with this methodological innovation does our study contribute to the literature, by eliciting preferences for delivery care it also contributes to the small literature on preferences for delivery care on the African continent. In contrast to the many preference studies on health care in the African context (Baltussen *et al.*, 2006; Christofides, Muirhead, Jewkes, Penn-Kekana, & Conco, 2006; Hanson, McPake, Nakamba, & Archard, 2005) studies on preferences for delivery care are rare. There are only two such studies that we are aware of (Kruk *et al.*, 2009a, 2009b).[4] Most of the literature on delivery care in the African context consists of observational studies on delivery care use. It is not our intention to review all of them in this section, but we review those that analyzed the role of wealth, empowerment, complications, and distance to health facilities. These are among the most important correlates of delivery care use (for a recent review see Gabrysch & Campbell, 2009), have important relevance for policymaking, and are therefore the main focus of our study, as we discussed earlier.

There is abundant evidence that delivery care use is positively associated with *wealth* and *female empowerment* (Abadian, 1996; Adamu & Salihu, 2002; Bloom, Wypij, & Das Gupta, 2001; Filippi *et al.,* 2006; Furuta & Salway, 2006; Glick, Razafindravonona, & Randretsa, 2000; Mrisho *et al.,* 2007; Stephenson, Baschieri, Clements, Hennink, & Madise, 2006; Woldemicael & Tenkorang, 2010). In particular, there are large differences in the use of skilled delivery care between poor and rich women (Filippi *et al.,* 2006), and the effect of a removal of user fees on increased facility-based deliveries is strongest for the poor (Ridde & Morestin, 2011). Delivery care use is also positively influenced by women's empowerment through maternal education, control over income, intra-household decision making, and perceptions of the value of skilled maternal health care (Furuta & Salway, 2006).

Evidence on the importance of *distance* to health facilities is mixed. Thaddeus and Maine (1994) argue in their literature review that distance to health facilities works as an important barrier to delivery care, and also results in a disincentive to seek care. Some empirical studies, however, did not find any correlation between physical proximity and health care use (Airey, 1989; Annis, 1981). The effect of distance is probably confounded by wealth and quality of care. Wealthier women have better access to transport means, and women often bypass local facilities to travel to more distant facilities that