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The impact of joint partner decision making on obstetric choices and obstetric outcomes among Malawian women

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Abstract

Objective—To determine the effects of joint partner decision making on obstetric choices and outcomes in Malawi.

Methods—Between July 15, 2014 and February 25, 2015, interviews were performed with women who reported at least one lifetime pregnancy in Lilongwe District, Malawi as part of a cross-sectional study of reproductive decision making. Logistic regression models were applied to examine associations of joint decision making with delivery location and obstetric complications.

Results—The study population included 860 women. Women who engaged in joint decision making with partners (adjusted odds ratio [aOR] 4.9; 95% confidence interval [CI] 3.3–7.2) and women whose partners made obstetric-care decisions alone (aOR 3.2; 95% CI 2.4–4.4) were more likely to undergo delivery at a healthcare facility compared with women who made obstetric-care decisions individually. In comparison with women who made obstetric decisions individually, no difference in the likelihood of experiencing obstetric complications was observed for women who engaged in joint decision making (aOR 1.1; 95% CI 0.7–1.7) or for women whose partners made decisions individually (aOR 0.8; 95% CI 0.5–1.3).

Conclusion—In rural Malawi, partner involvement in obstetric decision making was found to result in improved obstetric choices.

Keywords

Birthweight; Facility delivery; Joint decision making; Malawi; Obstetric complications; Partner decision making; Skilled birth assistant; Sub-Saharan Africa

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Conflict of Interest:

The authors have no conflicts of interest.

1. Introduction

Sub-Saharan Africa has the highest maternal mortality ratio of any region in the world [1]. Maternal mortality arises from both inadequate maternal health services and inadequate uptake of existing services [2]. Many women do not attend the recommended number of prenatal care visits or undergo delivery without having skilled attendants present; those who receive appropriate obstetric care least often include unmarried women, those with lower household income, those who have less education or less educated partners, and those who have more children and have not experienced complications during previous pregnancies [3, 4].

Decision-making autonomy is another important determinant in the uptake of maternal health services. Women in low-income countries are often precluded from household decision making, and this exclusion can also extend to reproductive health; power imbalances within relationships can interfere with women's ability to access reproductive health services [5]. Women, especially poor women with little or no education, are more likely to be in unequal relationships and to have limited autonomy in accessing obstetric care [5, 6]. In the context of limited autonomy and poor maternal health, facilitating joint decision making in obstetric care choices could improve obstetric outcomes. Involving male partners in maternal health education has been demonstrated to improve obstetric outcomes in India and Nepal [7, 8].

In the present study, data were collected as part of the baseline survey of a cohort study of sexual and reproductive health in rural Lilongwe District, Malawi. Questions regarding maternal health and access to health services are especially prominent in Malawi, where maternal mortality has remained high over the past decade despite a temporary government ban on traditional birth attendants providing obstetric care, as well as ongoing efforts to encourage facility deliveries and skilled assistance at delivery [1, 9, 10]. The present analysis included an overview of reported obstetric care, examining delivery locations, assistance present during delivery, delivery complications, and neonatal birthweight. The aim of the present study was to examine relationships between who made obstetric decisions about each participant's most recent delivery (a woman individually, their partner individually, or joint decision making) and two outcomes (delivery location and complications) to determine if facilitating joint decision making could be a useful reproductive-health intervention in the region.

2. Materials and methods

In the present study baseline data from a questionnaire administered as part of the "Umoyo wa Thanzi" (meaning "Health for Life") research project were analyzed; this is an ongoing prospective cohort study of sexual and reproductive health decision making in Lilongwe District, Malawi. Villages in the catchment area of a rural health facility—an area approximately 40 km² in size including 68 villages and 20 000 inhabitants—were selected via a two-stage, stratified, cluster sampling method that allowed for the enrollment of approximately 1000 women of reproductive age. In selected villages, all women aged 15–39 years, and their partners, were eligible to participate. Between July 15, 2014 and February

25, 1034 women and 441 men completed the baseline questionnaire. Owing to the outcomes of interest, only female participants who had been pregnant at least once were included in the present analysis. The study was approved by the Ohio State University institutional review board and the University of Malawi College of Medicine research and ethics committee prior to beginning enrollment. All participants provided written informed consent before being included in the study.

In each selected village, trained research assistants conducted face-to-face interviews in Chichewa with all consenting participants. Data were recorded on tablet computers using the Magpi electronic data capture system (Magpi, Washington, DC, USA) and were uploaded daily to an internet-based storage system.

The primary exposure was decision making in the context of obstetric care; each participant was asked who made the decision regarding where to deliver during their most-recent pregnancy. Participants could answer as follows: self (coded “independent”), partner (coded “partner”), self and partner together (coded “joint”), or someone else. The exposure was coded as an ordinal categorical variable and “independent” was used as the referent category.

Outcomes included measures related to each participant’s most recent delivery. Specifically, participants were asked to report the location of the delivery (home, traditional birth attendant’s home, on the road, at a clinic/hospital/health facility), assistance present during delivery (nobody, relative, traditional birth attendant, doctor/nurse), any complications (none, excessive bleeding, infection, prolonged labor, obstructed labor, high blood pressure, convulsions, obstetric fistula), and neonatal birthweight (very large [>4 kg], large [2.5–4 kg], small [1.5–2.4 kg], or very small [<1.5 kg]). For multivariable analyses, the location-of-delivery and complications variables were dichotomized. The location of delivery was coded as “health facility” (including delivery at a clinic, hospital, or health facility) and “outside health facility” (including home, traditional birth attendant’s home, and on the road). All complications were aggregated into a single outcome category and this group of participants was compared to women who had not experienced any complications.

Descriptive statistics were used to characterize the demographics, delivery practices, and obstetric outcomes of the participants. Village-level clustering was taken into account and separate unadjusted logistic regression models were constructed for the associations between joint decision making and the two outcomes of interest (delivery location and complications). Following this, models were adjusted for the relevant socioeconomic and demographic factors. Based on prior literature [4], it was decided *a priori* to retain age, education, and marital status in all models. The number of living children a participant had, whether the participant’s partner was also a study participant, and household wealth were evaluated as confounders and were retained if their removal resulted in a change in any association of interest by more than 10%. Goodness of fit was assessed using the Hosmer–Lemeshow test. All analyses were conducted using R version 3.2.2 (The R Foundation for Statistical Computing, Vienna, Austria).

3. Results

In the parent cohort study, 860 women had been pregnant at least once and were included in the present analysis population. The median age of participants was 27 years (interquartile range 22–32). Approximately half the participants (n=418 [48.6%]) had completed 4–8 years of education, and nearly a third (n=249 [29.0%]) had completed just 1–3 years of education. More women reported a monthly income below 5000 Malawian Kwacha (MK) (~US\$13 at the time of data collection) than reported a monthly income above MK20 000 (~US\$52) (n=298 [34.7%] vs n=212 [24.7%]). Most participants (n=794 [92.3%]) were married and the median number of living children was 3 (interquartile range 2–4) (Table 1).

When asked about their most recent pregnancy, most participants (n=649 [75.5%]) specified that they had undergone delivery at a health facility, with smaller numbers reporting home deliveries (n=90 [10.5%]) and undergoing delivery at a traditional birth attendant's home (n=81 [9.4%]) (Table 2). The most commonly cited reasons for delivering outside a health facility were a lack of transportation (n=71 [8.3%]), that labor occurred late at night (n=56 [6.5%]), and that the nearest health facility was too far away (n=54 [6.3%]). A majority of participants (n=591 [68.7%]) reported having skilled assistance from a doctor or nurse during delivery, and a minority (n=114 [13.3%]) reported having a traditional birth attendant present during delivery. Although none of the women who reported delivering at home had skilled assistance present during delivery, among the 649 women who had undergone delivery at a healthcare facility, some women (n=59 [9.1%]) reported not having skilled assistance during delivery.

Most women (n=670 [77.9%]) reported experiencing uncomplicated deliveries. Obstructed labor was the most commonly cited complication (n=62 [7.2%]) and some participants also reported excessive bleeding (n=52 [6.0%]) and/or prolonged labor (n=25 [2.9%]). Most participants (n=472 [54.9%]) reported that their most recently delivered neonate was large (2.5–4 kg) at delivery and a sizable group of women (n=177 [20.6%]) reported their child being very large (>4 kg) (Table 2).

Approximately one-third of women (n=287 [33.4%]) stated that they had made a joint decision with their partner regarding where to undergo delivery, with smaller numbers of participants reporting that they decided independently (n=223 [25.9%]), that their partner had made the decision individually (n=193 [22.4%]), or that someone else had made the decision (n=73 [8.5%]).

The both the unadjusted and adjusted logistic regression analyses found that women who reported joint decision making were significantly more likely to undergo delivery at a healthcare facility than women who reported making the decision independently (adjusted odds ratio [aOR] 4.9; 95% confidence interval [CI] 3.3–7.2) (Table 3). Additionally, women who reported that their partner made the decision regarding delivery location were more likely to deliver at a healthcare facility in comparison with women who reported making the decision independently, both in unadjusted and adjusted analyses (aOR 3.2; 95% CI 2.4–4.4). No differences were observed in the odds of obstetric complications occurring between women reporting joint decision making and women who engaged in independent decision

making, both in unadjusted and adjusted analyses (aOR 1.1; 95% CI 0.7–1.7) (Table 3). Similarly, no differences were observed in the odds of obstetric complications between women who reported partner decision making and women who engaged in independent decision making, both in unadjusted and adjusted analyses (aOR 0.8; 95% CI 0.5–1.3). According to the results of Hosmer–Lemeshow testing, all models demonstrated close fits with the empirical data.

4. Discussion

A significant minority of woman in rural Lilongwe District, Malawi, were found to undergo delivery outside a health facility (n=185 [21.5%]) or without the presence of skilled assistance (n=203 [23.7%]). Additionally, in comparison with women who made obstetric decisions independently, those who made these decisions jointly with their partner and those whose partners made these decisions independently were more likely to deliver at a healthcare facility.

The obstetric care reported by the present cohort of women in rural Lilongwe District, Malawi, was consistent with findings from the 2010 Malawi Demographic and Health Survey [11]. A sizeable proportion of deliveries occurred outside health facilities and without skilled assistance, confirming the continuing presence of gaps in women's access to maternal health services. Importantly among the present cohort, facility delivery was not synonymous with skilled assistance; a proportion of facility-based deliveries occurred without the presence of skilled assistance. The results of the present study are concerning given that WHO considers skilled assistance (and not necessarily facility delivery) critical in improving maternal health [9]. A combined lack of transportation and long distances to health facilities presented significant barriers to facility delivery for women in the present study, as they do across Sub-Saharan Africa [4, 12]. The prevalence of excessive bleeding in the present study population (6.0%) was lower than was expected. Estimates of the prevalence of postpartum hemorrhage in Africa range from 10% to 26% of all deliveries [13, 14]. This discrepancy could be a result of the well-established regional variation in the prevalence of postpartum hemorrhage [14] or the challenges of estimating blood loss and consequential misinformation of patients as a result [15, 16]. The prevalence of low birth weight (<2.5 kg) in the present population (13.1%) was consistent with WHO estimates for this region (13%). However, women in the present study could have estimated the birthweight of their neonates—more than half of neonates in Sub-Saharan Africa are not weighed at delivery [17]. The low birthweight incidence in the present study, as well as the WHO estimate, are likely underestimates the true prevalence of low birthweight. Additionally, the proportion of neonates weighing more than 4 kg at delivery was also likely an overestimate.

It was demonstrated that women reporting joint decision making were more likely to deliver at health facilities and, interestingly, that women reporting partner decision making were also more likely to deliver at health facilities than women reporting independent decision making. These findings suggest that partner involvement in obstetric decision making (with or without joint decisions) improves the uptake of maternal health services. A study of women in Uganda [12] has also reported that women who depended on their spouses to

make decisions regarding where to deliver were more likely to deliver at health facilities [12]. The present finding that partner decision making led to better obstetric choices compared with independent decision making by women could also illustrate women's limited autonomy within relationships.

Women could need permission from their partners to undergo delivery at a health facility. Alternatively, women could be able to negotiate their obstetric preferences but unable to access the key household resources—transportation or money for fees—needed to translate decisions into action [5, 18]. In the present study population, partner decision making could have led to facility delivery because male partners often control important household resources and are likely better able to mobilize those resources to act on their decisions [19]. By contrast, although women could have preferred to undergo delivery at a health facility, they could have been unable to mobilize household resources to support such decisions [18, 19].

Given that joint or partner decision making was associated with increased odds of facility delivery, it was expected that these exposures would be associated with reduced odds of obstetric complications [7, 8]; however, this was not observed in the present data even after adjusting for socioeconomic and demographic confounders. This lack of association could stem from a key limitation of the present analysis of obstetric complications, differential misclassification. Women who experienced complications with deliveries could have been less likely to report that they made the obstetric decisions independently; these women could have been more likely to report joint or partner decision making. Although joint or partner decision making could actually have been associated with fewer delivery complications, differential misclassification in the pattern described above could have biased the observed associations toward null. Another possible reason for the lack of association between joint decision making and obstetric complications is that women who knew they were at risk of complications based on prenatal counseling could have been more likely to deliver at a health facility; joint decision making could have demonstrated no protective effects against complications in the present analysis if women who experienced complications disproportionately delivered at health facilities.

Very few women in the present sample experienced complications, limiting the analysis. It is possible that complications remain undocumented—especially those that occur during home deliveries or in the absence of skilled birth attendants [16]. Complications could also remain unreported, as they are often stigmatized in Sub-Saharan Africa and considered to arise owing to disobedience or adultery [20]. Additionally, given the relatively rare nature of complications, even in low-resource settings, the present sample size could have been too small to detect significant differences by decision-making status. A final limitation of the present study was that cross-sectional data was analyzed. Further studies will need to develop interventions that facilitate joint decision making and examine their efficacy in improving obstetric choices and outcomes.

The finding that joint decision making was associated with facility delivery provides support for the benefits of joint obstetric decision making in Malawi and elsewhere. Encouraging joint decision making could take the form of maternal-health education interventions that

involve both pregnant women and partners—similar interventions have been found to improve obstetric outcomes in India and Nepal [5, 7, 8]. Though the results of the present study support the idea that partner participation in decision making can improve obstetric care, these findings are presented with a note of caution; a partner's involvement in obstetric decision making can be in direct conflict with a woman's autonomy [21, 22]. By way of example, inviting male partners to prenatal visits to increase their knowledge of obstetric complications could facilitate their participation in obstetric decision making; however, HIV testing is often integrated into prenatal care, and the presence of male partners at prenatal visits could jeopardize women's safety and decision-making power if women receive a positive HIV-test result [21–23]. Interventions that facilitate communication between partners could improve both a woman's autonomy and a male partner's involvement in obstetric decision making [21].

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Table 1

Participant characteristics (n=860). ^{a, b}

Variable	All participants	Participants who did not deliver at a healthcare facility	Participants who did deliver at a healthcare facility	Participants who experienced no obstetric complications	Participants who experienced obstetric complications
Education completed					
None	70/858 (8.2)	26/185 (14.1)	42/647 (6.5)	62/670 (9.3)	7/162 (4.3)
1–3 y	249/858 (29.0)	65/185 (35.1)	180/647 (27.8)	212/670 (31.6)	33/162 (20.4)
4–8 y	418/858 (48.7)	84/185 (45.4)	320/647 (49.5)	315/670 (47)	89/162 (54.9)
Secondary or beyond	121/858 (14.1)	10/185 (5.4)	105/647 (16.2)	81/670 (12.1)	33/162 (20.4)
Income					
<MK5000	298/860 (34.7)	70/185 (37.8)	221/649 (34.1)	246/670 (36.7)	45/164 (27.4)
MK5000–MK19 999	290/860 (33.7)	71/185 (38.4)	208/649 (32.0)	220/670 (32.8)	59/164 (36.0)
>MK20 000	212/860 (24.7)	38/185 (20.5)	170/649 (26.2)	156/670 (23.3)	52/164 (31.7)
Relationship Status					
Single	66/860 (7.7)	20/185 (10.8)	46/649 (7.1)	57/670 (8.5)	9/164 (5.5)
Married	794/860 (92.3)	165/185 (89.2)	603/649 (92.9)	613/670 (91.5)	155/164 (94.5)
Age, y	27 (22–32)	29 (24–33)	27 (22–32)	28 (22–32)	27 (22–32)
No. of Children	3 (2–4)	3 (2–4)	2 (1–4)	3 (2–4)	2 (1–4)

Abbreviation: MK, Malawian Kwacha.

^aDenominators vary throughout the table owing to missing responses in the data.

^bValues are given as number/denominator (percentage) or median (interquartile range).

Table 2Obstetric care and outcomes (n=860). ^a

Variable	No. (%)
Number of total lifetime pregnancies	
1	153 (17.8)
2	175 (20.3)
3	157 (18.3)
4	141 (16.4)
5	110 (12.8)
6	66 (7.7)
7 or more	58 (6.7)
Location of most recent delivery	
Healthcare facility	649 (75.5)
Home	90 (10.5)
Traditional birth attendant's home	81 (9.4)
On the road to hospital/traditional birth attendant	14 (1.6)
Reason for delivery outside a healthcare facility ^b	
Lack of transport	71 (8.3)
Labor occurred late at night	56 (6.5)
Distance	54 (6.3)
Labor began unexpectedly	13 (1.5)
Fast delivery	8 (0.9)
Cost	6 (0.7)
No guardian	5 (0.6)
Negative healthcare provider attitudes	4 (0.5)
My husband/partner did not want me to	4 (0.5)
Assistance present during delivery ^b	
Doctor or nurse	591 (68.7)
Traditional birth attendant	114 (13.3)
Relative	65 (7.6)
No assistance present	24 (2.8)
Obstetric complications ^b	
No complications	670 (77.9)
Obstructed labor	62 (7.2)
Excessive bleeding	52 (6.0)
Prolonged labor	25 (2.9)
Infection	19 (2.2)
High blood pressure	7 (0.8)
Convulsions	7 (0.8)
Obstetric fistula	1 (0.1)
Other	32 (3.7)
Birthweight, kg	

Variable	No. (%)
2.5–4	472 (54.9)
>4	177 (20.6)
< 2.5	113 (13.1)

^aPercentages under all subheadings do not total 100 owing to missing responses in the data.

^bParticipants could provide more than one response.

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Table 3

Associations between decision makers, delivery locations, and delivery complications.

Decision maker	Delivery took place in a healthcare facility		Obstetric complications occurred during delivery	
	OR (95% CI)	aOR (95% CI) ^a	OR (95% CI)	aOR (95% CI) ^a
Self	Ref	Ref	Ref	Ref
Partner	3.6 (2.6–5.1)	3.2 (2.4–4.4)	1 (0.6–1.5)	0.8 (0.5–1.3)
Joint	5 (3.5–7.0)	4.9 (3.3–7.2)	1.2 (0.8–1.9)	1.1 (0.7–1.7)
Someone else	1.7 (1.0–2.9)	1.6 (0.9–2.8)	1.5 (0.6–3.7)	1.6 (0.6–4.2)

Abbreviations: OR, odds ratio; CI, confidence interval; aOR, adjusted odds ratio; Ref, referent.

^aLogistic regression models were adjusted for age, education, and marital status.