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Exploring Factors Associated with Prevalence of Unskilled Birth Attendance amongst Kenyan Women in King'ong'o Slums, Uasin-Gishu County

Betty Chepkorir Cheruiyot[1*], Sharon Jerotich Katam[1], Margaret Jeruto Korir[1], Peninah kipkosgei Chesire[1], Joyce Baliddawa[2]

[*]*Corresponding author: bettychepkorir@gmail.com*
[1]*Department of Environmental Health, School of Public Health, College of Health Sciences, Moi University*
[2] *Department of Behavioral Sciences and Ethics, College of Health Sciences, School of Medicine, Moi University*

ABSTRACT
Objective: Home-births by traditional midwives continue to be mainstay in sub-saharan Africa and Asia and are intertwined with adverse outcomes and distinctly huge numbers of maternal and neonatal mortalities in these regions. The study aims to explore factors associated with home-births in women living in King'ong'o slums, Uasin-Gishu county. **Methods:** A descriptive, cross-sectional study approach was adopted. The closed-ended, researcher-administered questionnaire was administered to 150 Kenyan mothers who had delivered at least once at home from October to December 2011. We investigated the benefits and factors contributing to preference of home-births. The data was analyzed using SPSS 17 and presented using frequencies and percentages. **Results**: Of the 150 mothers interviewed, 103 (69.2%) had the basic education, 64 (42.5%) were house wives and 144 (96%) attended antenatal care in their last pregnancy. Home-birth fees were KES 675 on average. Factors associated mostly with home-births were: High costs of institutional delivery (37.3%), Precipitate labour (30.7%), Labour at night (12.6%), Long distance to health facilities (8.7%) and unfamiliar hospital practices (5.3%). **Conclusion**: Factors associated with traditional midwifery include poor educational and socio-economic status of women, high fees for skilled care, precipitate labour, lack of transport, long distance to health facilities, unfriendly birth attendants and health facility centers not open at night. Benefits of traditional birth attendants were affordability, friendly midwives and loving family, familiar environment and privacy.

Keywords: Skilled attendance; Traditional birth attendant; King'ong'o slums; Home-birth; Obtetric care; Women

The authors declare no conflict of interest exist

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I. INTRODUCTION

The World Health Organization (WHO) revealed that annual maternal deaths due to obstetric complications diminished by 43% from approximately 532, 000 in 1990 to an estimated 303,000 in 2015 (1). Sub-Saharan Africa (SSA) and Southern Asia accounted for about 86% (254 000) of the estimated 295 000 global maternal deaths in 2017 with SSA alone accounting for roughly two-thirds (196 000)(2).

An estimated 211 million pregnancies occur every year globally. Of the 136 million live births, 20 million women will subsequently experience maternal disability, which vary from fever, perineal tears, nutritional deficiencies, depression and puerperal psychosis, mastitis to severe complications such as obstetric fistula and uterine prolapse. Each year also, more than 4 million babies die within 28 days of life and nearly 3.3 million babies are stillborn. The lifetime risk for a woman to lose a newborn baby is 1 in 5 in SSA, which contrasts markedly with 1 in 125 in developed economies (3).

A Skilled Birth Attendant (SBA) has been described as an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal(uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns'(4). Skilled attendance in particular encompasses providers with the skills, equipment, drugs, supplies needed to conduct normal deliveries, recognize complications and management or referral to Emergency Obstetric Care (EmOC). The political, policy and socio-cultural environment can also enable or prevent 'skilled attendance (5). A Traditional Birth Attendant (TBA) on the contrary has been described as a traditional, independent (of the health system), non-

formally trained and community-based provider of care during pregnancy, child-birth and the postnatal period(4).

As the desire for home-birth grows in the western culture, evidences will continue to grow to give a better understanding of risks and benefits. Many women choose home-birth as delivering a baby in familiar surroundings is central to them(6). Others dislike a hospital or birthing center environment or a medically-centered birthing experience, are concerned about exposing the baby to nosocomial infections or dislike the presence of strangers at the birth (7). Additionally, some prefer home birth as they feel it is more natural and less stressful (8). The burden of home-births by TBAs has been estimated to be 44% in Ghana, 53% in Indonesia, 56% in Bangladesh, 65% in Pakistan, 83.3% in Ethiopia and 85% in Laos (6, 7, 9-12).

The 2008-09 Kenya Demographic Health Survey (KDHS)(13) found out that two out of five birthing (43%) occur in health facilities. However, KDHS 2014 is promising as 62% of births were attended by SBAs and a similar number (61%) represents birthing in a health facility. Consequently, Infant mortality rate has diminished to 39 deaths per 1000 live births down from 52 deaths per 1000 live births in KDHS 2008-9 (14). Nonetheless, Kenya had one of the highest Maternal Mortality Ratio (MMR) at 618 per 100 000 live births in 2005 and had reduced to 353 per 100 000 live births by 2015, evidently higher than the Millennium Development Goal target of 150 deaths per 100,000 live births(2). Yet Kenyan slum women in Nairobi had a much higher MMR of 706 per 100,000 live births during the period 2003-05 in a study by Zibara et al. Two-thirds of these maternal deaths were attributed to abortion complications, ante-partum and postpartum hemorrhage, postpartum sepsis, eclampsia and ruptured uterus(15).

A life-time risk of a woman dying during pregnancy or at child-birth in SSA is 1 in 37 which contrasts sharply with 1 in 7 800 in Australia and New Zealand in 2017 highlighting the burden of maternal deaths in resource-poor countries (2). Life-threatening complications develop in 15% of all pregnancies(9, 15). It has been postulated that most of these deaths and disabilities could be averted if women who face obstetric complications have access to timely obstetric care (4, 16, 17). Explicitly 20-30% of neonatal mortality too could be averted with skilled attendance (6, 7). As a matter of fact, global MMR of less than 70/100 000 live births is a target for Sustainable Development Goals (SDGs) by 2030 and no country is expected to have an MMR above 140/100 000(18).

Between the 1970s and 1990s, the WHO promoted TBA training as one strategy to reduce maternal and neonatal mortality. In Kenya, the program was later abolished after it was concluded that home-births by TBAs are a major contributor to maternal deaths as they are ill-equipped to notice danger signs besides HIV transmission (3, 16).

Kenya has approximately 13.8 doctors, nurses and midwives serving 10 000 population as of January 2016 against the WHO recommended 44.5 doctors, nurses and midwives per 10 000 population needed to meet the SDGs(19). Moreover, it has 2 physicians and 8.3 nurses per

10 000 population in 2018. This highlights the critically low density of Kenyan physicians from the WHO proposed ratio of 1:1000(20). To date, no study in Kenya has examined factors associated with home-births with TBAs in an extremely resource-poor setting of a slum. Therefore, this study was designed to fill this gap.

II. MATERIALS AND METHODS

An 8-itemized closed-ended, researcher-administered questionnaire was developed to investigate three (3) thematic areas: Baseline characteristics, benefits and factors contributing to preference of home-births. King'ong'o slums covers an approximate area of 4km2. An estimated number of women of child-bearing age (15-49 years) were 16 708 with 3 475 projected numbers of expectant mothers and 3 350 anticipated deliveries yearly. Conversely, only 4% of mothers deliver at the facility as per Huruma health centre clinic records, 23009. The population of interest entailed mothers (18-49 years) who had delivered at least once at home in King'ong'o slums; Uasin Gishu County, Kenya. The exclusion criteria encompassed younger mothers (less than 18 years) and those unwilling to participate. A cross-sectional study approach was then adopted and administered face-to-face to our study subjects from October to December 2011. The study protocol was approved by Institutional Review Committee (IREC) at College of Health Sciences, Moi University.

A. ***Statistical Analysis***

Statistical analyses were performed using Statistical Package for Social Sciences version 17; SPSS Inc., Chicago, Ill. Descriptive statistics by use of absolute numbers and percentages were useful in characterizing baseline information, benefits and factors contributing to preference of home-births in King'ong'o slums.

III. RESULTS

A. Baseline information

Overall, the study subjects were in the age range of 18-28 years; 103(69.2%), had primary level of education 80 (53.8%) and were housewives 64 (42.5%). There was a remarkable attendance to antenatal clinic for Antenatal Care (ANC) and Post-Natal Care (PNC) as per the findings of this study 144 (96%) and 139 (92.5%) respectively. ***(Table I)***

B. Benefits of unskilled birth attendance

Home-births were believed to be less expensive 75 (50%), in a familiar background; 30 (20%) and had friendly birth attendant; 30 (20%). ***(Table I)***

C. Reasons for unskilled birth attendance

High costs at the hospital 56 (37.3%), Precipitate labour 46 (30.7%), Labour at night 19(12.7%) and Long distance to the health facility 13(8.7%) mostly kept women away from institutional birthing centers. ***(Table II)***

IV. DISCUSSION

ANC uptake of at least one visit was relatively high (96%) in King'ong'o slums which is comparable to national antenatal coverage rates in Kenya, (92%) during the KDHS 2008-9 and 95.5% at KDHS 2014(14).These findings further augment with the Huruma health facility records in which ANC coverage was estimated to be 94% at the time of this study(21). The study subjects believed that ANC is fundamental for a healthy pregnancy outcome.

Analysis of baseline information established that 53.8% had primary level of education, 43.7% were illiterate, 42.5% of mothers were housewives and in the range of 18-28 years (69.1%). Poor maternal education and subsequent lack of meaningful employment have been demonstrated as important risk factors associated with home-births (7, 11).

Despite the admirable ante-natal and post-natal care visits, women still opted for unskilled birth attendance. Relatively high costs of skilled birth attendance at Huruma health facility was cited as a major deterrent to seeking SBA. This is informed by the fact that the study was undertaken in a considerably under-resourced setting. TBAs on the other hand were evidently cheaper with average fees of KES 675 (US$ 7.99) according to our study as compared to formal fee of

KES 1000 (US$ 11.84) for normal delivery in Huruma sub-county Hospital. Likewise as an incentive, the TBA host the mother together with their birth companion till the mother delivers.

Compelling body of literature has demonstrated that women choose unskilled birth attendance due to perceived, costly maternal health fees incurred besides transport to the health facility, food during hospital stays, opportunity cost of time, delivery pack and other consumables (6-12, 17, 22-32). A study by Sharma and colleagues established that informal fees; US$ 26.44, were five times the formal fees; US$ 6.64, for a facility-based birth and represented nearly 80% of total out-of-pocket expenses in India(31). Strikingly, unofficial fees were on average 12 times higher than official fees in yet another study in Bangladesh(26).

In Kenya, informal fees for maternal health services were approximately 59% of total out-of-pocket expenses (US$ 13.87) paid by expectant women whilst US$ 9.17 represented formal fee for an institutional delivery (31). Emerging evidence from another study by Margaret et al. demonstrated that charges for uncomplicated delivery in Kenyan hospitals were estimated to be KES 1106 (US$ 14.2) in 2006 which represented a 25% decrease from KES 1479 (US$ 19.0) in 2003 after adjustment for inflation(24). The reductions of fees were due to abolition of user fees as a way of health policy and financing to bolster hospital deliveries.

Some evidences of precipitate labour have also been reported in literature and this was also confirmed in our study. It was asserted that sudden and fast progression of labor results into prompt and in most situations a safe birth (6-8, 11, 12, 23, 29, 32, 33). Thus, there was no time to seek out skilled attendance. This was further compounded by high levels of insecurity especially at night and lack of transport in the study area.

Extensive research too confirm our findings that unfriendly birth attendants at the health facility keep women away. Many characterized facility-based providers as negligent, physically and verbally abusive. Others complained of outright neglect, describing health staff as unconcerned about women's progress with labour (6-10, 12, 17, 22, 29, 30, 32, 34, 35). On the other hand, the traditional midwife bridged the gap by attending to them compassionately with respect and in some cases praising them (7, 9, 22)**.** Home-births were also beneficial as one is surrounded by an affectionate family and relatives in a familiar environment as compared to unfriendly health staff in a totally new environment. Equally important, they had the traditional midwife throughout labour and delivery who ensured privacy and confidentiality (6-10, 12, 17, 22, 33). It's imperative to highlight some evidence that Laotian TBAs allow flexible sitting position where women hold on to a rope from the ceiling such that they can be in knee-chest position (8, 12).At the institutional settings however, a woman lie in a supine birthing (3 5)or in lithotomy position where a woman rests on her back with their legs strapped onto the metal stirrups(12).

Furthermore, our study demonstrated as well that unfamiliar hospital practices were unpleasant to labouring women**.** Fear of unknown medical procedures and anticipated hospital stays have been proposed. Although they do facilitate labour and delivery, are perceived as inappropriate to clients for instance episiotomy, vacuum extraction, vaginal examinations, being 'naked', uncomfortable supine position and administration of intravenous fluid (8, 12, 33, 35). Thus, this may lead to non-compliance hence abuse by health staffs (12). Yet other studies (29, 33) highlighted Kenyan women's heightened fear of undergoing a caesarean section delivery if they go to the hospital especially if a woman had a previous assisted birth.

Our study also found that labour at night, long distance to public health facilities, facility not open at night as well as absence of staff at night were all entangled and associated with low uptake of skilled care. Overwhelming evidences corroborate our findings as well (6-8, 10-12, 17, 29, 30, 32, 33, 35). However, the nurse-in-charge of Huruma sub-county hospital affirmed that the facility run on a 24-hour basis and had been expanded substantially since its upgrade to a level three (3) Hospital. Therefore, this might have inferred the former years before expansion. Nonetheless, alarmingly high insecurity levels in king'ong'o slums, poor and unreliable transport system, poor infrastructural network such as impassable roads and electricity are disincentive to conventional birthing.

Limitations of the Study

The cross-sectional nature of the study cannot infer causal associations. Further longitudinal studies on expectant mothers and their preference regarding the choice of delivery need to be undertaken before the present findings can be generalized.

V. CONCLUSION

These study findings elucidated the three phases of delay model encountered by mothers in their bid to seeking skilled birth attendance; therefore opt for traditional midwifery, which is positively correlated to high maternal and neonatal mortalities:

Delay in decision to seek care is associated with poor educational and socio-economic status of women, high fees for skilled care, precipitate labour, lack of transport, long distance to health facilities and unfriendly birth attendants. Delay in reaching an adequate health care facility is caused by lack of transport and poor infrastructural network, labour at night and long distance to hospital. Delay in receiving adequate care in contrast is correlated with fewer and unfriendly health staff and health facility centers not open at night. Benefits of home-births are affordability, friendly midwives and loving family, familiar environment and privacy. Therefore, efforts should be made to ensure linkages between traditional birth attendants and hospital personnel to secure facility deliveries. Extensive awareness should be made to mothers and the community leaders on birth plans, recognition of obstetric complications, emergency ambulatory services and free maternal care at the public health facilities.

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TABLE I. BASELINE INFORMATION

Variable	Total	
	N	%
Age-groups		
18-28	103	69.1
29-39	26	17.2
40-49	21	13.7
Education		
Tertiary	4	2.5
Primary	80	53.8
None	66	43.7
Occupation		
Casual labour	39	26.3
Business	39	26.3

Housewife	64	42.5
Employed	4	2.5
Others (student, Not Employed)	4	2.5
Ante Natal Care attendance		
Yes	144	96
No	6	4
Post Natal Care Attendance		
Yes	139	92.5
No	11	7.5
Average fee of Home-birth by TBA (KES)	675	
Benefits of Home-birth by a TBA		
Familiar background	30	20
Less expensive	75	50
Friendly birth attendant	30	20
Being with family and relatives	15	10

TABLE II. REASON FOR UNSKILLED BIRTH ATTENDANCE

Factor	**Total**	
	N	**%**
Labour at night	19	12.6
Unfamiliar Hospital practices	8	5.3
Precipitate labour	46	30.7
High cost of delivery at the health facility	56	37.3
Unfriendly birth-attendants at the Hospital	2	1.3
Long distance to health facility	13	8.7
Absence of staff at night	4	2.7
Facility not open	2	1.3

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