

## Factors and determinants associated with home based deliveries among women in Muteteshi area, a peri-urban of Kapiri, Zambia

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### ABSTRACT

**Background:** In most rural areas of Zambia, over two thirds of births recorded annually, occurred at home than in health facilities. This study was aimed at determining the factors associated with home based deliveries among women at Muteteshi peri-urban locality, in Kapiri district of the country. Consequently, it was vital to ascertain whether the female's literacy standards, age groups, husband or other reasons might influence their preference in place of delivery (pod). **Study design and methodology:** Structured questionnaires were used to collect data from a cross-section, involving a target sample of 120 females, aged in ranges of 16-24, 25-34 and those more than 35 years old. Data entry and analysis was done using IBM SPSS Statistics version 22. Multivariate analyses were performed to compare variable proportions on crosstabs, using the Pearson Chi-square tests. Only results yielding the p-value of less than 0.05 were considered to be of statistical significance. **Results:** The child deliveries associated with age groups were found significant at p-value 0.004, between home and health facility deliveries and were categorized with 68.8-31.3%, respectively, from the women age group of 25-34  $n=48$ ; 44.4-55.6%, respectively, from the women age group of 16-24  $n=36$  and 80.6-19.4%, respectively, from the women age group above 35  $n=36$ . The influence from the woman's husband on the choice of place of delivery, was significant at p-value 0.022, with only 30.8% of respondents getting an affirmative authority for using either a home or health centre delivery (51.4-48.6%  $n=37$ ) while the majority of 67.5% of respondents got negative answers in using health facilities from their spouses (72.8 - 27.2%  $n=81$ ). Factors associated with home deliveries were: distance, computed at 64.1%; emergency abrupt labor at 17.9% and with no reason at 17.9%. Overall, 65% of women delivered at home while only 35% delivered from health facilities. **Conclusion;** Home based deliveries are still very common in comparison to health centre based deliveries, among the muteteshi peri-urban community. Major factors hindering the health facility deliveries for women were the distance from health facilities and the influence of choice from their husbands.

**KEY WORDS:** Deliveries, women, age group, home, health facility, factors, influence, Zambia

### Introduction

Childbirth, also known as labour or delivery is the process for ending a pregnancy into one or more babies, leaving a woman's uterus through the vaginal passage or by a c-section [1,2].

According to WHO, there were about 135 million births recorded during the year 2015. From these births, 15 million were either premature or pre-term babies born before 37 weeks of gestation while between 3 and 12% were born post-term after 42 weeks [3,4]. Numerous studies have indicated that deliveries in the developed world have mostly occurred in hospital set-ups while mothers in the developing world are more associated with the home deliveries [5,6]. The normal woman's pregnancy takes 40 weeks, with premature and pre-term deliveries occurring before 28

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and 37 weeks, respectively. On the other hand, gestation periods lasting 42 weeks and above are regarded as post-term pregnancies. Most of these pregnancies might end up into premature deliveries, spontaneous pre-term deliveries (SPD) and induced labour, respectively [4,5,7], which are serious emergencies requiring a well-trained skilled health worker attending to a pregnant mother at delivery [8,9]. During the Zambia Demographic Survey (ZDS) conducted in 2007, more than half of births recorded (52 percent) occurred at home. A further scrutiny on the type of health facilities used revealed that, 43 percent of deliveries occurred in public sector facilities while 5 percent occurred in private sector facilities. Younger women and women having their first baby were more likely to deliver in health institutions (55 and 65 percent, respectively). However, this proportion declined sharply with an increase in birth order so that, women in urban areas were about three times more likely to deliver in public sector facilities than their rural counterparts (79 and 28 percent, respectively) [10]. Generally, the prevailing situation in Zambia is that women resident in urban areas, mostly deliver in health facilities, while a variety of factors including: (i) Distance from the health facility, (ii) spouse decisions, (iii) women's educational standards and (iv) the poverty situations have been associated with the choice of place of delivery in rural areas [11,12,13]. For most rural women, certain unpalatable behaviours presented by care providers on delivering mothers, coupled with other negative birth stories heard from family members and friends can completely make them lose confidence in delivering at a health facility [14]. It is a fact therefore, that every pregnant woman stays well resolved and preconceived on the decision made on the place of delivery, whether home based or at health facility. To some extent, some women also make advance arrangements, to select particular birth attendants they would be comfortable with, when their date was due [14]. In a study conducted among the rural population of Bangladesh, it was revealed that the level of literacy affected the place of delivery in that the larger population of those who had deliveries at home were among those that didn't go very far with their educational standards [15]. The current study involved the elucidation of factors of educational standard of mothers, distance from the health facility coupled with other factors of the age group of mothers and the influence of husband on place of delivery.

## Methods

### Study site and population

The study was conducted in the community of Muteteshi residence area, a peri-urban of Kapiri

Mposhi district in Zambia, located on the grid coordinates of 14° 05'S and 25°31'E. A stratified qualitative sampling method, involving a representative target sample of 120 women of different age groups of 16-24; 25-34 and those over the age of 35. The standard of minimum education i.e. Primary, Secondary or without any formal education among respondents was also a prerequisite.

### Study design

The stratified sampling design involving a cross-section of women in the locality. Data was collected from questionnaires with standard questions on women's delivery preference and factors influencing their decisions.

### Ethical clearance

Ethical clearance to conduct this research was obtained from the Health Research and Ethics Committee of the Tropical Diseases Research Centre (TDRC) in Ndola. Necessary procedures as outlined in the medical professional code of conduct were followed in accordance.

### Sample size and sampling

A Statcalc program in EPI INFO version 7.1.33 was used to estimate the sample size. The total population on the study area was 914 female pupils and the sample size that was calculated at 95% level of confidence level, marginal error of 5% and baseline levels was 120. Pupils were randomly selected from grades 10 to 12 streams. The sample size calculation were based on the following formulae:

$$\text{Sample size} = \frac{n}{1 + \frac{n}{\text{Population}}}$$

$$\text{Where } n = \frac{Z^2 P (1-P)}{e^2}$$



### Data entry method and analysis

Data entry and analysis was done using IBM SPSS Statistics version 22. The Chi squared test was used to determine associations between variables. Baseline characteristics of the study population were summarized using tables and bar graphs. The cut off point for statistical significance was set at 5%.

### Results

The deliveries associated with age groups were found significant at p-value 0.004, between home and health facility and were categorized with 68.8-31.3%, respectively, from the women age group of 25-34  $n=48$ ; 44.4-55.6%, respectively, from the women age group of 16-24  $n=36$  and 80.6-19.4%, respectively,

from the women age group above 35  $n=36$  (Table 3 & Fig. 3). The influence from the woman's husband on the choice of place of delivery, was significant at  $p$  – value 0.022, with only 30.8% of respondents getting an affirmative authority for using either a home or health facility delivery (51.4 - 48.6%  $n=37$ ) while the majority of 67.5% of respondents got negative answers in using health facilities from their spouses (72.8 - 27.2%  $n=81$ ). Factors associated with home deliveries were: distance, computed at 64.1%; emergency abrupt labor at 17.9% and with no reason at 17.9%. The educational standards among women was found not significant in affecting the pod at  $p=0.340$ . Overall, 65% of women delivered at home while only 35% delivered from health facilities.

### Discussion

To our knowledge, child deliveries in most rural areas of Zambia is home based [10,12], having been mainly influenced by a number of factors such as distance from the health facility and based on advice from the woman's husband on a place of delivery (Figs. 2 & 5; Table 2), [11,12]. Despite that the educational standard factor of women in our study was not found significant (Fig. 4), the levels of understanding on the importance of hospital delivery is still very low among rural dwelling women, so that a simple negativity portrayed on a healthy facility is found easily swaying a good number of less educated women to a home based delivery [14]. The cultural norms of respecting and abiding with whatever decisions women husband's made, no matter how retrogressive they were, influenced women on their choice of delivery [16,17,18]. On contrary, educated women with a principled and strong mental power would always stick to their decisions of health care delivery, no matter the influence they would get from any sector of society.

The trend on the choice of delivery place among the rural women gradually skewed to home delivery as they progressed in age, with the younger cohorts aged group of 16-24 mostly preferring the health facility for delivery to the home based (Table 3 & Fig. 3) [10]. It is envisaged that poverty plays a role on the decision of husbands, in influencing their wives to deliver at home [19,20,21,22]. Due to distance from the health facility, coupled with the souring transport costs (Fig. 2; Table 2) in addition to some compulsory accessories,

delivering mothers might need to take to the health centre on the delivering date, a husband would insist on his lame excuses in his quest to warrant his wife to deliver at home [19]. For the impoverished family, it is also a great cost to let the expecting mother travel in advance and camp at near-by hospital or clinic at the 28th week of gestation period until they delivered [20].

In this study and indeed many other studies conducted in Zambia, the distance factor from the health centre is more retrogressive to rural dwellers in that despite the pregnant woman might have resolved to deliver at a health facility, they may get affected with other emergency labour conditions and end up delivering home [4,5,7].

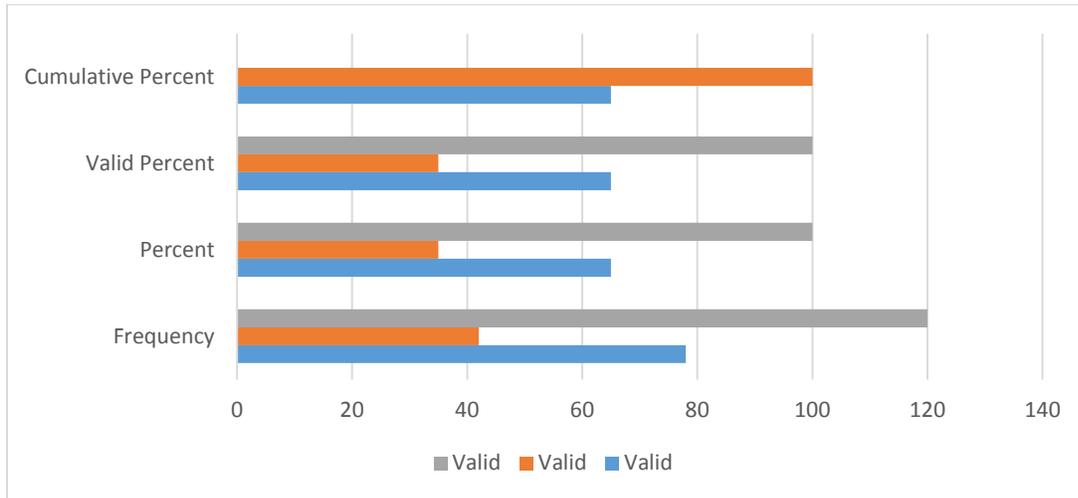
It is also a pity to note that both the uneducated men and women, living either in urban or rural areas knew very little that the domestic violence and other social vices depressing an expectant mother have a direct effect on the development of a newly born baby [23,24]. Furthermore, it is unknown among most uneducated communities that under nutrition of a pregnant mother triggers a series of antenatal and neonatal ailments including: premature and pre-term deliveries and also impairs the offspring's epigenetic status [25,26].

To this effect therefore, increasing the number of births in health facilities is an important practice so as to reduce prenatal, neonatal and maternal deaths, arising from complications of the pregnancy [4,5,7]. The remedy to this being for an expectant mother to camp at the health facility during the 28<sup>th</sup> week of gestation till they delivered. Our study concurs with that of the 2007 Zambia Demographic Survey (ZDS), in which it was revealed that the younger age group mothers of 16 -24, were more associated with health centre deliveries when giving birth while the older age groups mostly delivered from home [10].

Our study entails that more work is expected from health providers, to sensitize all antenatal attendants through pictorial brochures and other video entertainments to update both women and husbands on the safety needs and dangers of antenatal, neonatal and postnatal stages [27,28]. These sensitization media might change the husbands' hearts towards their uneducated wives living in rural Zambia.

**Table 1: Place of delivery**

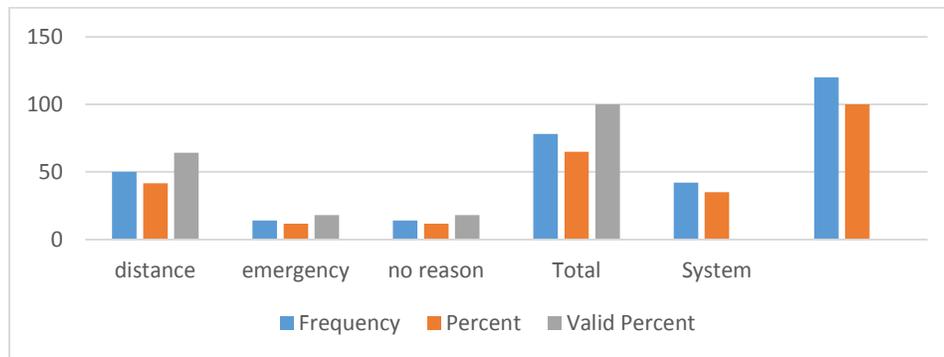
		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Home	78	65.0	65.0	65.0
	Health center	42	35.0	35.0	100.0
	Total	120	100.0	100.0	



**Fig 1:Place of delivery**

**Table 2: Reason for home delivery among women**

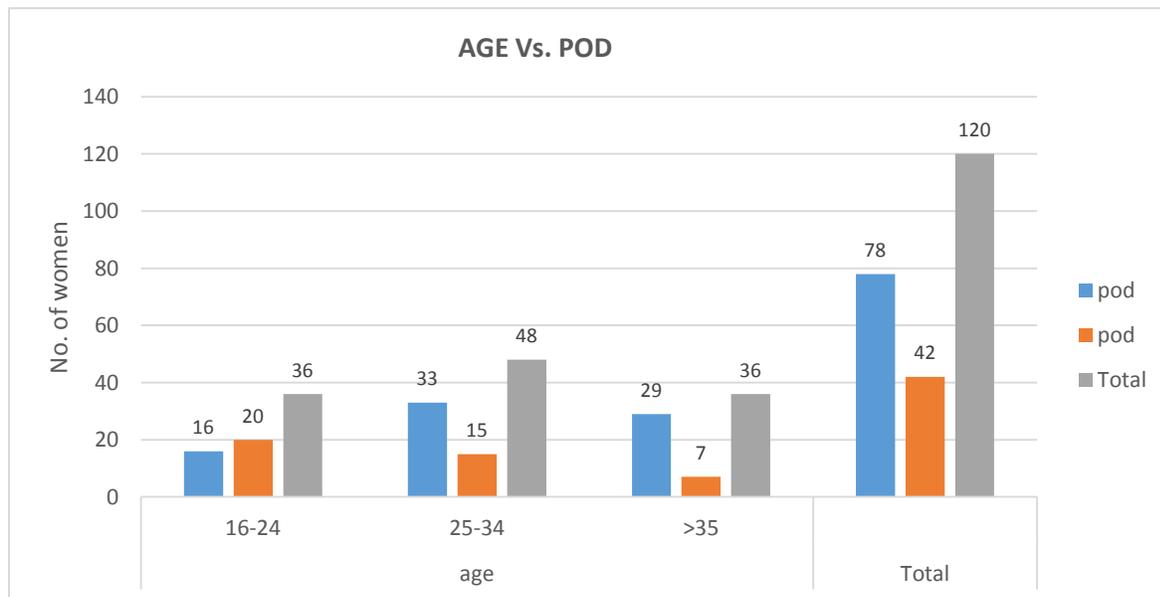
		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Distance	50	41.7	64.1	64.1
	Emergency	14	11.7	17.9	82.1
	No reason	14	11.7	17.9	100.0
	Total	78	65.0	100.0	
<b>Missing</b>	System	42	35.0		
<b>Total</b>		120	100.0		



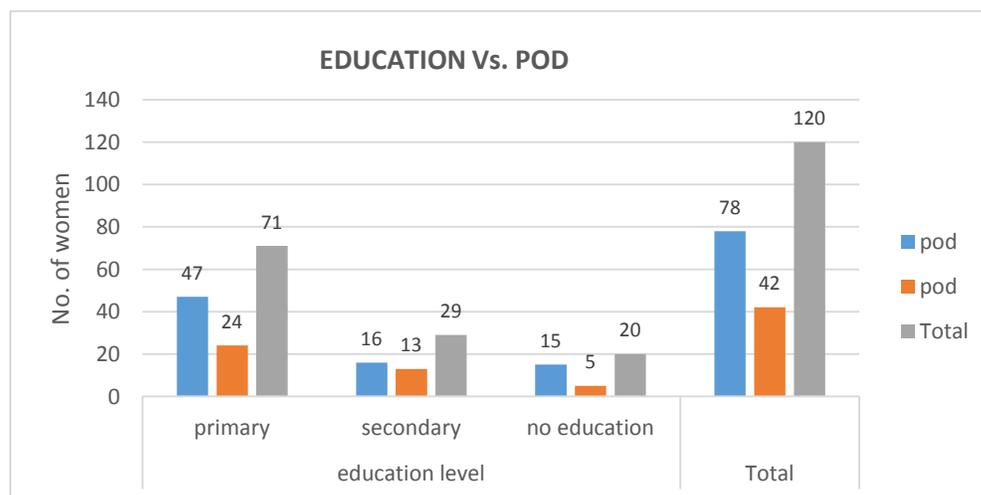
**Fig 2: Reason for home delivery among women**

**Table 3:age of women as association with place of delivery**

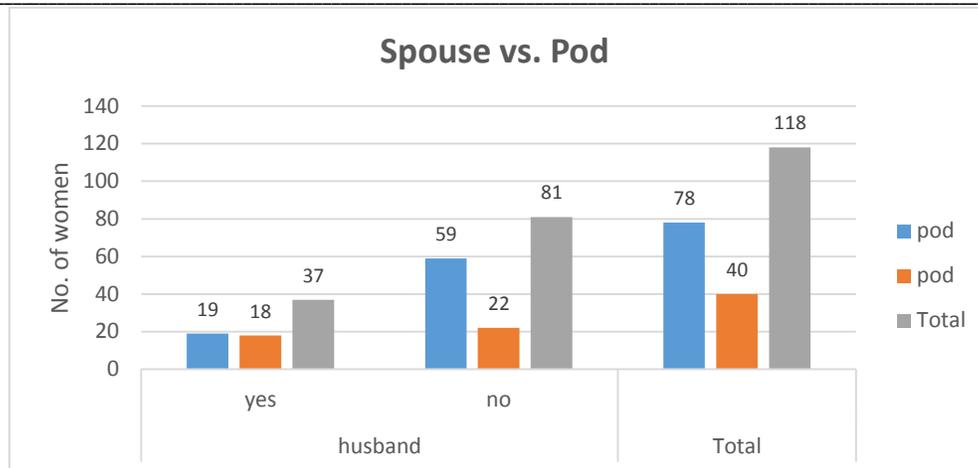
Age group	Home%(n)	Health facility% (n)	Total% (n)
16 - 24	44.4 (16)	55.6 (20)	100 (36)
25-34	68.8 (33)	31.3 (15)	100 (48)
>35	80.6 (29)	19.4 (7)	100 (36)
<b>Total</b>			100 (120)



**Fig 3: Age of women as association with place of delivery**



**Fig 4: level of education as associated to place of delivery**



**Fig 5: Influence of male partner on delivery place**

### Limitations

The major limitation faced was the population size, hence the research been specified to a limited to this specific community. Households are also far a partly distributed in this region making data collection time consuming for a very small sample.

### Recommendation

- 1). Need for Ministry of Health to introduction antenatal brochures to unravel the barriers of antenatal and choice of place of birth among uneducated men and women resident in rural areas.
- 2). Encourage all expectant mothers living in far flung areas to always camp at the health facility on their 28<sup>th</sup> week of gestation until they deliver (contents must be included in the brochure).
- 3). Outline the dangers of domestic violence in relation to neonatal development (contents must be included in the brochure).
- 4). Outline the nutritional requirement for pregnant mother to enable a fully grown fetus on delivery (contents must be included in the brochure).

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### Conclusion

Home based deliveries are still very common in comparison to health center based deliveries among muteteshi peri-urban community. Major factors hindering the health centre deliveries for women are the distance from health facilities and the influence of choice from their husbands. For this fact, a sensitization brochure to educate rural based families should be developed and distributed to women during the antenatal time.

### ABBREVIATIONS

- Pod = Place of delivery  
 C-section = Cesarean section  
 SPD = Spontaneous pre-term delivery (SPD)  
 TDRC = Tropical Disease Research Centre  
 ZDS = Zambia Demographic Survey  
 WHO = World Health Organization  
 UNICEF = United Nations International Children's Emergency Fund  
 UNFIPA = United Nations Population Fund  
 CBU = Copperbelt University

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