Differential Usage of Basic & Emergency Obstetric Care Services in Tanzania: Facilitating and Impeding Factors

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Introduction

The United Republic of Tanzania suffers from a very high level of maternal mortality and morbidity. The level is stagnant at 580 per 100,000 live births (2004) from the last decade. Despite the focused efforts of federal government towards reduction of maternal mortality through various measures, the preventable deaths among women due to the causes related to maternity, could not have been arrested till date, though the Island of Zanzibar shows some progress.

Part of the problem is attributed to the individual and community level factors; i.e., low level of education among the women, lack of decision making power regarding health and other matters, inadequate access to resources, and also the lack of male involvement in women's reproductive health. While at the service level impediments include, inadequacy of health facility at government primary health centres and lack of skilled manpower, in spite of the fact that 75 percent of the country's population is covered within the accessible distance from government primary health care facilities. It is moreover believed that inferior quality and inadequacy of services provided by government health facilities, negatively affects the utilization. On the other hand, though private health centres do exist to a considerable extent, a majority do not provide maternal and child care services. The sub-optimal usage of government facilities for maternal care services is highlighted by the fact that as per the recent evidence, less than 50 percent of the deliveries are institutionalised while less than 5 percent of the deliveries are caesarean section. The evidence depicts the crucial fact that still there remains half the deliveries unattended by trained professional which are not safeguarded against women's life-threatening obstetric conditions unforeseen during delivery. Secondly the entire expected level of obstetric complications is not brought under the domain of emergency obstetric care, which itself can be the major contributor to maternal deaths.

Looking at the hindrance of maternal mortality reduction, the government of Tanzania has given more focused attention to this cause in recent years. During the period of five years from 2006-2010 the country is committed to reduce the level of maternal mortality through multifaceted measures including the ensured availability and accessibility of basic and emergency obstetric care. Since majority of the obstetric complications cannot be predicted or prevented, a vast majority of women who die in childbirth can only be saved through prompt, efficient and appropriate treatment of contingencies. It is believed that the major causes of maternal mortality (heamorrhage, sepsis, abortion complications, hypertensive diseases and obstructed labour) are all manageable at the primary level health facilities that offer comprehensive EmOC services. EmOC thus summarizes the functions critical to save mothers' lives, also known as signal functions, which incorporate;

1. Administration of parenteral antibiotics.
2. Administration of oxytocic drugs.
3. Parenteral anticonvulsants for pre-eclampsia and eclampsia.
4. Performance of manual removal of placenta.
5. Removal of retained products.
6. Performance of assisted vaginal delivery (active management of third stage of labour).
7. Performance of surgery.
8. Performance of blood transfusion.

The facility which is well equipped to provide first six services is considered as Basic Emergency Obstetric Care (BEmOC) Centre, while the facility which is able to provide the last two services in addition is called Comprehensive Emergency Obstetric Care (CEmOC) Centre (Maine and Bailey, 2001). Life of the women can be saved through the provision of necessary B/CEmOC services, together with strengthened peripheral facilities in order to reduce the barriers in the access to such emergency services. Hence, at the service provision level the measures that Tanzanian Government has opted include, scaling up of infrastructural facilities for basic and emergency obstetric care and facilitating the availability of skilled manpower. While at the individual level efforts are targeted to make the women enabled to receive both basic and emergency care during pregnancy and delivery, through greater participation of the community and households.

Need for the study

At this juncture it is important to understand the factors that impede women to seek basic and emergency obstetric care, a vivid understanding of which is expected to provide more distinct policy direction. The paper aims to provide similar insights.

Objectives

The aim of the paper is to understand women's differential use of basic and the emergency obstetric care and the determinants of such use. The specific objectives of the paper are to examine-

- The utilization of basic obstetric care services and its determinants
- Components of basic obstetric care received during last pregnancy
- Determinants of differentials in EmOC care received, in specific terms of *skilled attendance during delivery* and *c-section deliveries*
- And to understand the effects of changes in access to the above two components of EmOC, with respect to different individual and household level attributes.

Data

The paper utilized Demographic Health Survey data for Tanzania of the most recent available round during 2004.

Methods

Both bivariate and multivariate statistical techniques have been engaged to appear at the conclusion. Multivariate logit regression was carried out to isolate the marginal effects of independent covariates, while analysing differential uptake of basic and emergency obstetric care services.

Results and Discussion

The sample

The total number of eligible women surveyed under the Nigeria DHS-2004 were 10, 329. The entire sample was selected from the 26 subdivisions, including 21 regions from the mainland Tanzania and five subdivisions from Zanzibar.

Table 1: Eligible Women Samples Surveyed in DHS-2004, Across the Subdivisions of Tanzania

Subdivisions	Percent	Frequency
Dodoma	3.4	351
Arusha	3.9	402
Kilimanjaro	3.4	349
Tanga	3.5	358
Morogoro	3.1	325
Pwani	3.2	334
Dar Es Salam	4.0	412
Lindi	3.1	324
Mtwara	3.3	344
uvuma	3.5	362
Iringa	3.2	331
Mbeya	3.9	402
Singida	4.2	433
Tabora	4.7	485
Rukwa	3.9	403
Kigoma	4.0	414
Shinyanga	4.6	477
Kagera	3.6	376
Mwanza	4.2	435
Mara	4.0	415
Manyara	3.7	385
Zanzibar North	4.3	441
Zanziba South	3.7	387
Town West	5.2	537
Pemba North	4.2	433
Pemba South	4.0	414
Total	100.0	10,329

However, of these total 10,329 eligible women, we took out only those cases of women who either had given their last birth during three years preceding the survey or had been pregnant at the time of survey. This was based on the logic, since we attempted to study the recent pattern of maternal health care uptake by the women. The number comes to

5,394 eligible women (52 percent of the total samples). Hence our analysis is based on these 5394 cases.

The sample profile

As shown in the Table 2, the median age of these selected women was 27 years, while half of them belonged to the age group 21-30 years.

Table 2: Background Characteristics of the women

	Percentage	Number
Age		
15-20 years	14.9	803
21-30 years	50.5	2723
31+	34.6	1868
Median age (in years)	27.0	
Place of residence		
Urban	19.2	1036
Rural	80.8	4358
Median stay in present place of residence (in years)	20.0	
Education		
Illiterate	26.8	1446
Upto primary	10.4	560
Upto secondary	57.2	3085
Above Secondary	5.6	303
Marital status		
Never married	5.5	294
Married	77.2	4166
Living together	9.0	484
Widowed	1.8	95
Divorced	3.8	204
Not living together	2.8	151
Religion		
Moslem	40.4	2179
Catholic	24.0	1295
Protestant	24.0	1296
Other	11.6	623
Number of living children		
None	4.3	231
1-3	58.0	3128
4+	37.7	2035
Currently working	80.8	4357
Type of earning for work		
Not paid	63.6	2934
Cash only	23.0	1061
Cash and kind	6.0	276
In kind only	7.4	339
N	100.0	5394

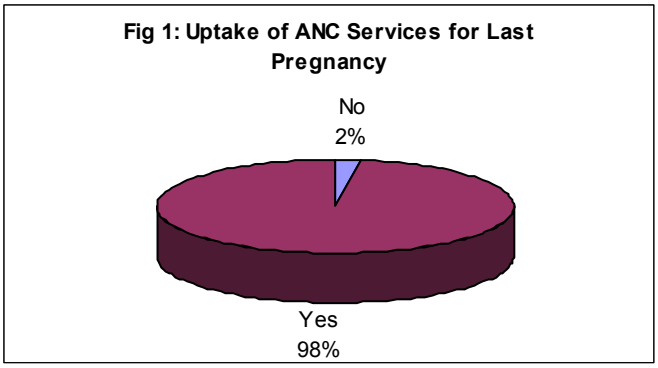
A majority hailed from rural areas (81 percent), with a median 20 years of stay at present residence. The women considerably were found educated, while a more than half reported attaining beyond primary level education. Over three fourths of these women

were currently married (77 percent), followed by women from living together relationships (9 percent), the rest was never married (6 percent) or widowed, divorced or separated. Nearly two out of every five women belonged to the Moslem religion, followed by Catholic Christian (24 percent) and protestant Christian (24 percent). More than half had 1-3 living children (58 percent), more than one-third (37 percent) mothered over 3 children, while only a meagre proportion of 4 percent reported to have no living children.

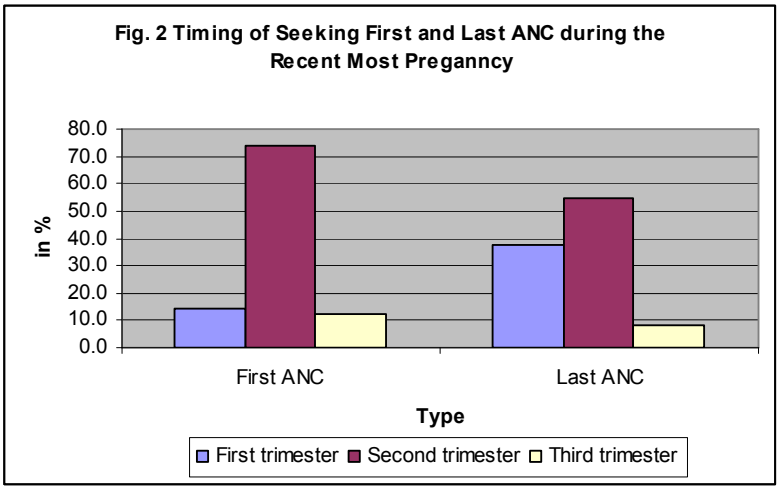
In regard to their occupational pattern, an overwhelming 81 percent of women reported working, aside from their household work. But as shown in the Table 2, 64 percent of the women having said to work aside household chores were not paid. While, only 23 percent were paid in cash, the rest was received a mixed payment either in cash & kind (6 percent) or only in kind (7 percent).

Uptake of Antenatal Care Services during Last Pregnancy

It is assumed that a good ANC together with high-risk approach would help in reducing maternal mortality in a country. DHS collected information on uptake of various maternal care services during the last pregnancy period. It showed (Fig. 1), that almost universally women sought for ANC services during the last pregnancy, occurred during three years period preceding the survey.



It was important to know the timing when the ANC was sought. More specifically, during which month of pregnancy the first and last care was sought. Fortunately the data allows us to retrieve such information.



As shown in the Fig. 2, the highest proportion of women sought both their first and last ANC service in the second trimester. Though DHS does not provide data on the number ANC visits made during the last pregnancy period, it seems from the above figure that a majority of the women made only one ANC visit, either duging first trimester or during the second trimester. The proportion seeking their ANC at the last trimester was considerably low, which might be considered having serious implication on their health. Since, the last trimester becomes crucial in many respects related to the child-care, information on delivery, it also might shape the decision related to institutional delivery and understanding of the potential risk involved in child-birth from physical condition as the due date come closure. However, it was interesting to know the places, from where the ANC was sought.

Table 3: Place for ANC Service Uptake

	Percent	Frequency
Home	0.0	1
Govt. health centers	88.2	4342
Private health centers	2.0	96
Religious/voluntary	9.8	482
Total	100.0	4,921

Table 3 shows, that a majority of these women sought ANC services from the Government health centers (88 percent), followed by religious or voluntary facilities (10 percent). While, almost a negligible proportion of women sought for ANC services from private health care centers (2 percent), which is probably logical since in Tanzania private centres do not generally offer ANC services to the women. On the other hand, women receive free care at government health facilities, had lead them seeking care from such facilities. We were also interested to know the persons involved in providing ANC services to these women. As shown in Table 4,

Table 4: Type of Provider Rendered ANC Services to the Women

	Percent	Frequency
Medical	93.6	4760
Paramedical	2.4	120
Unskilled	1.7	87
Not received ANC	2.4	120
Total	100.0	5,087

Almost universally (94 percent) the women received ANC services from medical personnel; doctor, nurse, ANM, clinical officer or assistant clinical officer. While a meager proportion reported to receive care from paramedical (i.e., trained birth attendant and village health worker) and the rest from unskilled personnel. When place of ANC and the provider for ANC was crosstabulated, it showed that a comparative higher proportion of women who sought private care for ANC, was served by the unskilled personnel (3.1 percent), comparing those seeking care from government facilities (1.7

percent). This needs further investigation, however is not possible from the present data set.

We were interested to check the status of ANC service uptake across the subdivisions of Tanzania. Though as discussed above a majority of the women sought ANC services from Government health centers the pattern was varied across the subdivisions. As shown in the Table 5, the subdivisions where a comparatively higher proportion sought ANC care from private providers were Dar Es Salam (10 percent), Pwani (7 percent) and Mbeya (5 percent) from mainland and Town west (4 percent) from Zanzibar.

Table 5: Place of ANC Service Uptake, across the Subdivisions of Tanzania, DHS- 2004

	Source of ANC			
Subdivisions	Government	Private	Religious/ Voluntary	Total
Dodoma	90.8	2.2	7.0	185
Arusha	75.9	3.6	19.9	166
Kilimanjaro	80.5	2.5	16.9	118
Tanga	98.8	.6	.6	171
Morogoro	76.9	1.4	21.8	147
Pwani	90.8	6.7	2.5	163
Dar Es Salam	81.6	10.4	8.0	125
Lindi	97.2	.7	2.1	144
Mtwara	94.6	.0	5.4	168
Ruvuma	58.9	.0	41.1	192
Iringa	69.9	1.3	28.8	153
Mbeya	89.1	5.0	6.0	201
Singida	84.9	.5	14.7	218
Tabora	89.8	.4	9.8	266
Rukwa	91.1	.4	8.5	236
Kigoma	84.1	1.9	14.0	214
Shinyanga	89.4	3.0	7.6	263
Kagera	90.3	1.8	8.0	226
Mwanza	94.6	.9	4.5	222
Mara	91.0	3.2	5.9	221
Manyara	75.1	3.2	21.6	185
Zanzibar North	98.3	.0	1.7	178
Zanziba South	99.4	.6	.0	166
Town West	92.7	4.1	3.1	193
Pemba North	100.0			205
Pemba South	97.9	.0	2.1	195
Total	88.2	2.0	9.8	4,921

Some of the subdivisions showed considerable proportions having received care from voluntary/ religious health centers. The highest among these subdivisions were Ruvuma (41 percent) and Iringa (29 percent). The subdivisions where nearly one-fifth percentages of the women sought ANC from religious/ voluntary centers were Arusha (20 percent), Morogoro (21 percent) and Manyara (22 percent). Probably in these subdivisions, a higher proportion of religious/ voluntary organizations are functional and do extend their services for would be mothers.

Components of Antenatal Care Services Received during ANC

Though almost every woman (98 percent) reported to receive ANC services for their recent most pregnancy, within three years preceding the survey, it was important to check for the actual components received from the ANC visits. Table 6 describes the service components received from ANC visits. As shown, nearly two of three women reported to receive atleast two- Tetanus Toxoid (TT) injections, as per the WHO recommendation, while 16 percent reported to receive more than these suggested doses. In all, 62 percent mentioned to have Iron Folic Acid (IFA) syrup or tablets during their pregnancy.

Table 6: Service Components Received During ANC

Components Types	**Percentage Received**
TT injection	
None	21.9
Two	62.2
More than two	15.9
IFA Tablet / Syrup	61.7
Weight measured	93.5
Height measured	55.8
BP checked up	67.6
Urine sample taken	43.6
Blood sample taken	52.5
Was told about pregnancy complications	39.8
Told about higher facilities for emergency	38.5
Any malarial drug given	42.5
N	5394

Among other suggested routine check-ups, 94 percent reported had measured their weights, 56 percent had measured height, for 68 percent blood pressure was checked up, for 44 percent urine sample was collected and 53 percent had given their blood sample for further investigation. It is recommended that every woman should be informed about the pregnancy complications during their ANC visits, so that they are able to identify the actual crisis and a timely help is sought to avert further complications. This however

holds more importance for nullipara women, comparing those who had previously delivered babies and had have some experience in this regard.

As shown in the Table 6, overall 40 percent of the women reported to receive information about pregnancy complications during their ANC visits, while 39 percent were reportedly informed about the places where they can avail such requisite emergency services. The observation leaves a pertinent doubt that the women were not properly informed about the complicacies that can arise during pregnancy and also during child birth. More concerns however existed for the first-time mothers, since they might have been largely unaware of the situations, having being exposed to pregnancy for the first time. The result shows that, 45 percent of these first time mothers were informed about pregnancy complications during their ANC visits, comparing 43 percent of the higher parity women (not shown in table). The difference is however not statistically significant.

We ran a logistic regression to understand the predictors of information given to the women related to pregnancy complication. The predictor variables chosen in this regard include current age of the woman, urban/rural place of residence, current marital status, termination of pregnancy within five years preceding the survey, incidence of first pregnancy, place of ANC, type of routine check up received during ANC, person given ANC services, and wealth quintile of the household the woman belongs to. The result of logit regression considering the status of information received on pregnancy complication (0=no and 1=yes) as the dichotomous dependent variable is shown in the Table 7.

Table 7: Predictors of Differentials in Receiving Message during ANC on Pregnancy Complications

Predictors	Exp (ß)
Current age of the woman ©	1.017***
Place of residence	
Urban ®	
Rural	.877
Marital status	
Other ®	
Currently married	.842*
Ever terminated pregnancy	
No ®	
Yes	1.098
First pregnancy	
No ®	
Yes	1.115
Place of ANC	
Govt ®	
Other	1.059
Type of routine check up received during ANC	
Incomplete ®	
Complete	2.612***
Person provide ANC services	
Other ®	
Medical personnel	.738*
Wealth Index	
Poor ®	
Medium	1.076
Rich	1.390***

Constant	.520**

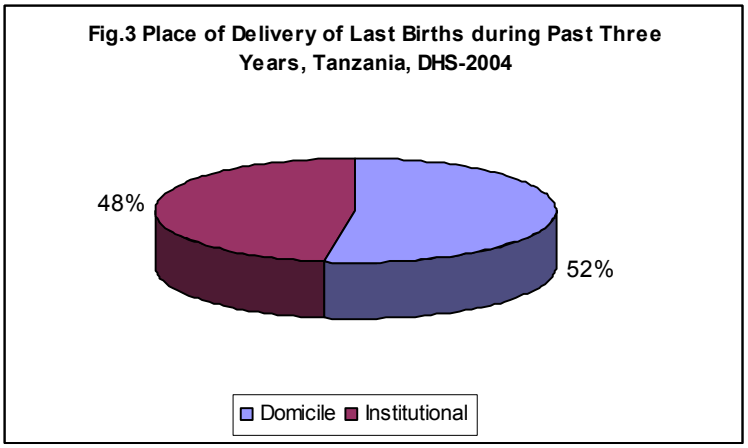
Significance level- *** p <.001, ** p<.01, * p<.05

As shown in the Table 7, with increasing age women showed higher chances of being informed about the pregnancy complications during ANC visit. This might be occurred since the women had been pregnant more number of times and already had been aware about the complications that might arise during the child birth or pregnancy; they themselves have asked for certain clarifications in relation to that. Another observation from the Table 7 shows that, the currently married women had lower odds of receiving these precautionary messages, with reference to the women who were into living in relationships, widowed, divorced, or never married. The explanation for such a findings is however hard to guess. Nevertheless, it was logical to observe from the Table 7 that, women who reported to have received all the components during their ANC visits, had better chances of getting informed about pregnancy complications, comparing those who received only an incomplete check ups. These women probably had made several visits for ANC and came in contact with medical personnel for multiple instances. However, it is surprising to observe that the women who were provided care during ANC by the medical personnel, showed lower chances of getting informed about pregnancy complications, than those who were served by non-medical personnel during ANC. Probably it is indicative of the fact that medical personnel providing ANC at facilities were much under shortage of time to provide quality care to their clients, which however needs further probes. Information received on pregnancy complication also is observed having a clear economic gradient. As shown in Table 7, comparing the women from poor household wealth index, the women from rich classes showed higher odds of getting informed about pregnancy complications, which visiting facilities for ANC services.

Delivery care

Though the overall uptake of ANC services remains almost universal, the quality of ANC varied across different groups. The above observations on routine ANC care and the received information on pregnancy complications clearly indicates that there have been some differentials across sub-groups. However, it was important to understand the pattern of delivery care since reduction of maternal death is largely instrumental on childbirth in institutional set-ups, assisted delivery by skilled attendants and complicated deliveries intervened through caesarian section. Many studies have indicated that avoidable maternal deaths could be largely averted if a proper referral mechanism is fixed to the set-up and complicated cases are extended timely medical support. Avoiding the three specific delays (i.e., delay in decision making, delay in transportation and the delay in getting medical attention in facilities), has achieved proven results against averting maternal deaths and disabilities.

Hence, we were interested to understand the scenario of delivery care in Tanzania from the recent round of DHS-2004. As shown in the Fig. 3, more than half the deliveries occurred in recent times had been domicile.



Looking at this largely domicile deliveries, it was also important that we understand whether these were attended by skilled personnel or not. The data shows that, overall half the deliveries (51 percent) irrespective of their place were attended by skilled personnel, such as, doctor, nurse, ANM or clinical officer. However the rest was attended by semi-skilled or unskilled persons like, trained birth attendants, traditional birth attendants or relatives or friends. The fact showed that complicated deliveries would have been at stake, primarily because a large proportion were conducted at homes, and also because half of them were not attended by skilled manpower. We attempted to understand the determinants of institutional deliveries, across the subdivisions of Tanzania. Overall, Table 8 shows a comparatively higher proportion of women from more urbanized subdivisions reported to have delivered at institution, comparing their counterparts living largely in rural subdivisions.

Table 8: Pattern of Institutional Delivery of Last Birth during Past Three Years, across the Subdivisions of Tanzania, DHS-2004

	Institutional Delivery	Total (N)
Dodoma	38.3	188
Arusha	48.0	196
Kilimanjaro	69.7	119
Tanga	41.2	177
Morogoro	53.0	149
Pwani	44.2	163
Dar Es Salam	92.1	127
Lindi	48.3	147
Mtwara	35.1	168
Ruvuma	78.1	192
Iringa	72.5	153
Mbeya	38.2	228
Singida	43.9	223
Tabora	54.6	271
Rukwa	39.6	240
Kigoma	41.1	219
Shinyanga	47.0	281
Kagera	37.7	228
Mwanza	51.7	230
Mara	33.6	226

Manyara	38.1	215
Zanzibar North	24.7	178
Zanziba South	56.6	166
Town West	75.9	195
Pemba North	27.8	205
Pemba South	42.2	204
Tanzania	47.6	5,088

It may be inferred from the table that women in rural areas across the country, needed further motivation towards institutional delivery. An optimum infrastructure is still required to be put in place to cater for their needs during delivery, if to avoid adverse maternal consequences.

We further attempted to check for some selected predictors of institutional delivery at the national level. Table 9 presented below shows the result of logistic regression with the dichotomous variable measuring places of delivery; i.e., 0=domicile, 1=institutional. The table shows that with growing age, the woman showed lower odds of delivering at institutions. This finding goes along with the fact that first time mothers had higher chances of delivering in institutional set-up than those who previously had given birth.

Table 9: Predictors of Place of Delivery for the Recent Most Pregnancy, Tanzania, DHS-2004

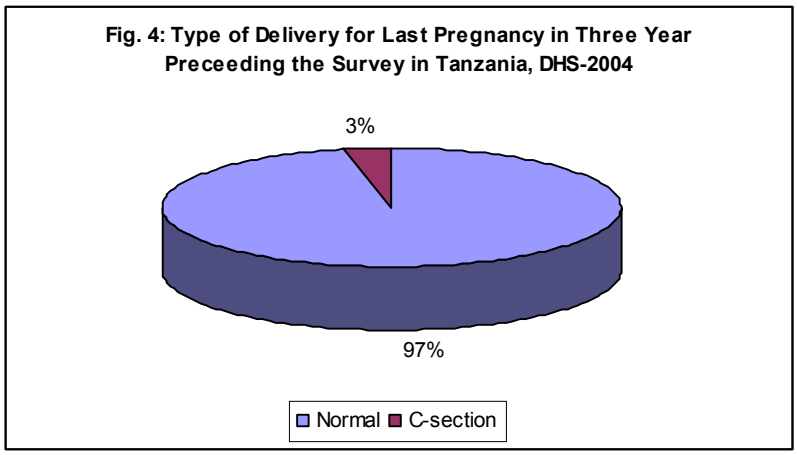
Predictors	Exp (ß)
Current age of the woman ©	.974**
Place of residence	
Urban ®	
Rural	.274***
Marital status	
Other ®	
Currently married	.972
Ever terminated pregnancy	
No ®	
Yes	1.068
First pregnancy	
No ®	
Yes	2.598***
Place of ANC	
Govt ®	
Other	2.145***
Person provide ANC services	
Other ®	
Medical personnel	1.774*
Wealth Index	
Poor ®	
Medium	1.487**
Rich	2.518***
Individual Possession of Asset	
No®	
Yes	1.660***
Status of individual earning	
Not in cash ®	

Earn in cash	1.174
Constant	1.392

Significance level- *** p <.001, ** p<.01, * p<.05

As discussed earlier, rural women showed lower chances of institutional delivery, comparing urban women. The women who sought ANC care in non-governmental centers had higher chances of delivering their child at institutions, with reference to those who sought ANC services from government health centers. Women having served by medical personnel at their ANC visits showed higher odds of institutional delivery, comparing those who were served by non-medical personnel. Though individual status of earning did not have any impact, but both household wealth index and individual possession of assets explained the differentials in institutional deliveries. As shown in the Table 9, comparing the women from poor income bracket, the women from medium and rich households had higher chances of delivering their recent most babies at institutional set up. Also, the women who reported to have individual possession of any asset (i.e., jewelry, livestock, land or dwelling) showed higher chances of delivering at institutions, than those who reported to possess none.

One of the objective of the paper pertained to the understanding of the two important indicators of utilization of EmOC services. The two indicators which could be studied from the DHS data sets are skilled attendance at delivery and c-section deliveries. Overall a considerable proportion of child-births were attended by skilled manpower, and 3 percent of the total deliveries were found having conducted by C-section. It was important that the predictors of skilled attendants are checked while understanding the differentials across the women in Tanzania. However, no significant pattern could be found from the multivariate logistic regression considering type of assistance during delivery as the dichotomous dependent variable (0=semi/unskilled, 1=skilled).



As mentioned above, overall a meager proportion of 3 percent of the deliveries were conducted by C-sec. This present level of C-section fell below the suggested minimum level of 5 percent. This may lead one to believe that such surgeries might be

doing only a little to lessen the risk of life-threatening complications among mothers, where it is required the most. The context however has got a service level factor. To arrive at a fare conclusion to explain this sub-optimal level of C-section deliveries, one needs to study in-depth the availability of services related to C-section and also the cost incurred for such services, which however is beyond the scope of the present paper. However we made an attempt to understand the prevalence of C-section deliveries in respect to recent births, across the subdivisions of Tanzania.

Table 10: Prevalence of C-section Deliveries for the Most Recent Births, across the Subdivisions, Tanzania, DHS-2004

Subdivisions	Percent	Total (N)
Dodoma	0.5	188
Arusha	3.1	196
Kilimanjaro	9.2	119
Tanga	2.8	177
Morogoro	11.4	149
Pwani	1.8	163
Dar Es Salam	6.4	125
Lindi	4.8	147
Mtwara	3.0	168
Ruvuma	6.8	192
Iringa	6.5	153
Mbeya	2.6	228
Singida	2.7	223
Tabora	2.6	270
Rukwa	0.8	240
Kigoma	3.7	219
Shinyanga	1.4	278
Kagera	4.8	228
Mwanza	4.8	230
Mara	1.3	225
Manyara	3.7	215
Zanzibar North	1.1	178
Zanziba South	1.2	166
Town West	3.1	194
Pemba North	1.9	206
Pemba South	2.0	204
Tanzania	3.3	5081

As seen from the Table 10, though overall the country had 3 percent of the recent deliveries assisted by C-section, the scenario across subdivisions is varied. There are subdivisions like, Morogoro (11 percent), Kilimajaro (9 percent), Dar-Es-Salam (6 percent), Ruvuma (7 percent) or Iringa (7 percent), where the level of C-section deliveries had been consistent with the level of 5-15 percent, by the WHO. To make a conclusive idea about this differential across the states, one must understand the prevalence of complications during delivery at the subdivision level, which has not been possible from the current data set. One also should study the pattern of available infrastructure across the states of Tanzania particularly for EmOC services. Additionally,

the prevalence of maternal mortality at the recent period should give a fare idea whether the EmOC indicator like C-section can explain the differentials in maternal mortality across these sub-divisions. In case a negative correlation is found between level of C-section delivery and prevalence of maternal mortality, a definite suggestion would be widening the access of EmOC facilities across the subdivisions of Tanzania.

In the present section however, from user's perspective we made a modest attempt to understand the predictors of C-section deliveries.

Table 10: Predictors of C-Sec Delivery for the Recent Most Birth, Tanzania, DHS-2004

Predictors	Exp (ß)
Current age of the woman ©	1.068***
Place of residence	
Urban ®	
Rural	.509***
Marital status	
Other ®	
Currently married	
Number of pregnancy ©	.634***
Ever terminated pregnancy	
No ®	
Yes	1.201
Place of ANC	
Govt ®	
Other	1.647*
Person provide ANC services	
Other ®	
Medical personnel	.880
Wealth Index	
Poor ®	
Medium	1.342
Rich	1.544*
Constant	.027***

Significance level- *** p <.001, ** p<.01, * p<.05

As shown in the Table 10, with increasing age women showed higher chances of undergoing C-section deliveries. This finding is however contradicting with the observation from the same table that with the occurrence of higher order pregnancy, women had lesser chances to undergo C-section deliveries. The probable explanation could be, women having their first delivery at higher ages had more chances to under C-section surgery, comparing their counterpart. As expected, women from rural areas showed lower odds of C-section delivery, with reference to urban women. This is probably justified since we already had observed that women from rural areas reported to deliver largely at home, where C-section is improbable. We observed from the Table 10 that, again there remains an economic gradient in case of C-section. With reference to

poor women, those who belonged to richer households showed higher chances of undergoing C-section deliveries. The reason is explicit upon their affordability of bearing the cost of C-sec surgery.

Conclusion

Government of Tanzania is commited to reducedthe level of maternal mortality in the country, which at presently recoded at 580 per 100,000 live births (DHS, 2004). The impeding factors towards reduction of maternal moratliy rages across facotors related to users as well as service delivery. The paper shows almost universal uptake of ANC services in Tanzania according to DHS, 2004. As has been observed, the ANC services are main sought from government health sources, and the women had been attended by medical personnel during their visits. However, the components received during ANC visits were not found uniform. It could be seen that less than half of the first time mother s were informed about the probable pregnancy complication during their ANC visits. It leaves concerns for the fact the women having been served even by medical personnel during ANC, had lower chances of getting informed about pregnancy complications. A clear cut economic gradient is observed in this respect, as the women from richer households showed better chances of getting informed about complications more than their counterparts from poorer or medium wealth index households. The paper also throws light on the fact that though slightly over half the respondents were attended by skilled personnel, less of half of the deliveries were conducted at institutions. Women with higher ages were found more likely to delivery at home. Hence age becomes one crucial impeding factor for delivering at institutions. Urban women overall had higher chances of institutional delivery, which falls along the expected lines. Private ANC care seems to promote institution delivery more than those who sought care from government set ups. Economic gradient is prominent in case of both institutional delivery and C-section deliveries. Some sub-divisions across Tanzania showed over medicalization in terms of higher proportion of C-section delivery.

Government of Tanzania has to take-up micro level planning for achieving a significant reduction in the level of maternal mortality. Overall, the women still needs to get motivated for institutional delivery, the cost of such institutes ought to be at subsidized rates. The level of maternal mortality is an important demographic indicator for health status of the nations; hence every effort is called for to make the scenario better.