RESEARCH ARTICLE

PERCIEVED METHODS OF ENHANCING UTILIZATION OF SKILLED DELIVERY CARE SERVICES IN MUKUYUNI LOCATION, BUNGOMA COUNTY, KENYA

Wapukha W. Innocent

Department Of Environmental and Occupational Health, Kenyatta University.

……………………………………………………………………………………………………....

Manuscript Info	Abstract

………………………. ……………………………………………………………………

The study sought to establish perceived methods of enhancing utilization of skilled delivery care services in Mukuyuni location of Bungoma County in Kenya. A community-based cross-sectional study design was employed in the study. The target population for the study were women of reproductive age residing in Mukuyuni location who had delivered within a five-year time frame and willing to respond unconditionally. The researcher used systematic random sampling to select the women to be interviewed from each of the sampled villages of the study area which had a study population of 2300. 300 respondents provided the information while 2 women refused to cooperate with the researcher and 25 of the sampled women were not available during the time of study. The collected data was coded and entered into SPSS software package for processing and analysis using descriptive and inferential statistics. The data was presented using tables, charts and graphs where appropriate. 148 (49.3%) of the respondents had skilled delivery in a health facility while 152(50.7%) had unskilled delivery. Among those women who had unskilled delivery, 45 (15%) were assisted by TBAs, 94 (31.3%) by relatives and 13 (4.3%) gave birth by the roadside after intensified contractions. Suggestions that were given by respondents on how to enhance utilization of skilled delivery care services among expectant women comprised of building more health facilities; increasing essential equipment in health facilities; training health professionals to provide holistic and friendly services; educating the community on importance of skilled delivery services; giving incentives to the mothers when they deliver in the health facility; providing emergency vehicles to ferry expectant women to health facilities for delivery and improvement of road infrastructure for better and faster access to health facilities. The study concluded thatthe current acceptance of utilization of skilled delivery care services in the area of study is still below average and therefore the researcher recommends that more health facilities should be constructed within the study area to reduce the distance from peoples' homes to the health facility, health professionals should change their attitude and handle pregnant mothers in a friendly manner and lastly public health department should organize more community outreaches to mobilize and sensitize communities on importance of skilled attendance at delivery.

Corresponding Author:- Wapukha W. Innocent
Address:- Department Of Environmental and Occupational Health, Kenyatta University.

………………………………………………………………………………………………....

Introduction:-

Skilled delivery healthcare services include all services dealing with labor and childbirth which are provided by a health professional trained to manage pregnancies, childbirth and postnatal period (WHO et al., 2014). According to World Health Organization (2013), maternal and infant deaths have remained to be a significant issue in developing countries despite the fact that many of these countries have shown readiness to adopt both preparedness and emergency readiness. Delivery care at hospitals is usually sought as a last resort after one has already developed severe complications. Access to health care varies across countries, groups, and individuals, largely influenced by social and economic conditions as well as the health policies in place.

Globally, approximately eight hundred and thirty mothers die daily of causes related to pregnancy and childbirth (WHO, 2016) while UNICEF (2017), reports that every year one million newborns die on the first day of delivery. Every year in Africa, around 250000 women die due to pregnancy-related complications while a third of close to one million stillbirths occur at the period of labor and approximately 280000 newborns die soon after they are born (WHO, 2013). Even though booking and attendance of skilled midwifery services at childbirth can help in curbing maternal and neonatal deaths; many women in low and middle economic countries still deliver without the help of trained professionals in health facilities.

In Kenya, approximately 400 mothers in every 100000 who deliver die and this has remained unaltered since 2005 (UNICEF, 2014). KNBS (2010) relates the high maternal deaths to the fact that a good number of women are attended to by unskilled birth attendants since nationally only 43% deliver in health facilities by the help of skilled professionals. Conditions arising before, during and after delivery were the second leading causes of deaths in 2010 (Government of Kenya, 2010).

Several studies have been done to identify factors that would determine whether an expectant woman would seek skilled delivery services. For instance, a survey among women in Tharaka-Nithi County indicated that the level of antenatal facility attended by a pregnant woman, parity, level of education and birth preparedness were significant factors determining health facility delivery (Gitonga, 2016). Also, a study conducted in western Kenya by Eijket al. (2006) established that the level of education, distance to the health facility, socioeconomic status and high parity are factors influencing skilled delivery utilization.

According to the Kenya Health Survey (2014) only 47.8% of women in the western region of Kenya (Kakamega, Busia, Vihiga and Bungoma counties) delivered by the help of skilled providers. The survey also showed that 35.4% of the women who gave birth in Bungoma County did so by the help of Traditional Birth Attendants (TBAs).

Therefore, the purpose of this study was to establish methods of enhancing utilization of skilled delivery care services in Mukuruni location of Tongeren sub-county in Bungoma County.

Problem statement

Despite the efforts by the Kenyan government to provide free maternal care services, there have been many cases of delayed booking for ANC and unskilled delivery exposing infants and mothers to high risks of mortality. Many women deliver in their homes with the help of female relatives or TBAs which make it difficult to help them in case of complications hence risking the life of the infant, mother or both.

Underutilization of skilled care services has been a problem in the developing world. There is a growing concern about the poor utilization of delivery care services at health facilities among pregnant women in Kenya despite the effort put in place by the government to provide free maternity services to all expectant mothers. 82% of children in urban areas are delivered in a health facility compared to 50% of those in rural areas (KDHS, 2014). A close analysis of the Kenya Demographic Health Survey (KDHS) 2008-09 by Kitui et al. (2013) established that marital status, place of residence, household wealth, education, ethnicity, parity, age at birth of the last child are factors influencing place of delivery of a woman.

Bungoma County is far much behind the national average for the uptake of maternal and newborn health services since only 40.8% of births in Bungoma happen with the help of skilled birth attendant compared to the national average of 62%. Furthermore, Bungoma as a county was ranked position 43 out of 47 counties in Kenya regarding

skilled birth attendance (KDHS, 2014). In Mukuyuni location there have been cases of high numbers of mothers taking children for immunizations at health facilities compared to those who deliver at health facilities. Many women deliver in their homes with the help of female relatives or TBAs which make it difficult to help them in case of complications hence leads to lose of infant, mother or both. Accordingly, this study focused on achieving the following objectives:

Broad Objective:-
To establish perceived methods of enhancing utilization of skilled delivery healthcare services among pregnant women in Mukuyuni location, Bungoma County, Kenya

Specific objectives
1. To find out the magnitude of utilization of the various types of delivery healthcare services in Mukuyuni location
2. To establish respondents' perceived methods of enhancing utilization of skilled delivery care services in Mukuyuni location

Methodology and Design:-
Research Design
The study employed the use of descriptive cross-sectional research design to establish respondents' perceived methods of enhancing utilization of skilled delivery care services in Mukuyuni location, Bungoma County. This study design enabled the researcher to study the respondents within their natural environment at one point in time.

Location of the study
The study was carried out in Mukuyuni location which is located inTongaren Sub- County of Bungoma County in Kenya. The study location is a remote area located in between three other locations of Tongaren Sub- County (Nabing'eng'e, Maliki and Makunga Locations). The location experiences an average annual rainfall of1628mm with the main rainfall season being from March to July and other months experiencing short rains except January which is a short dry season with little impact on the climate of the area. The average temperature in the Location was $21.1^{o}C$. According to 2009 Kenya population census, the total human population of Mukuyuni location is 8,912 with farming being the main economy activity. The types of crops that thrive in the area were maize, millet, sweet potatoes, beans, cassava and vegetables.

The location had one main whether road which cuts across it to connect residents to Kitale-Webuye highway. The main mode of transport was use of Motorcycles and Oxcarts in case one was transporting many goods.

Study population
The study population comprised women of reproductive age residing in Mukuyuni location with children below five years of age prior to the study.

Inclusion and Exclusion criteria
The respondents who were recruited into the study comprised of women of reproductive age residing in Mukuyuni location with a child of age 5 years and below and who had lived in the area for at least one year. Mentally handicapped women were excluded from the study

Sampling technique and sample size determination
Sampling Technique
The location was purposively selected. The location was clustered into 20 villages and then mothers with children below five years in the villages were identified in their homesteads with the help of CHEWS and CHWs/CORPs. Finally, the sample was apportioned to the villages based on the size of the study population they hold.

Systematic random sampling was used to select the women who were interviewed from each of the villages of the study area which had a study population of 2300. The desired sample size was shared amongst the strata (villages) using the following formula:

$$x = \frac{(No.\,of\ mothers\ who\ delivered\ within\ 5\ years\ in\ a\ village\ x\ sample\ size)}{total\ study\ population\ of\ sampled\ villages}$$

Where x represents the number of women that were interviewed from each sampled village

Table 1:- Sampling procedure.

Villages	Total No. Of Mothers In A Selected Village	Procedure	NO. OF MOTHERS TO BE SAMPLED
Lukhokhwe A	117	117x327÷2300	17
Bilibili	109	109 x327÷2300	15
Mukuyuni	127	127 x327÷2300	18
Mfupi	117	117 x327÷2300	17
Londo	121	121 x327÷2300	17
Njete	125	125 x327÷2300	18
Makhendu	104	104 x327÷2300	15
Lainimoja A	131	131 x327÷2300	19
Line moja B	120	120 x327÷2300	17
Mukuyuni township	122	122 x327÷2300	17
Nandemu	116	116x327÷2300	16
Namirembe	98	98x327÷2300	14
Sinoko	110	110x327÷2300	16
Binyenya	114	114x327÷2300	16
Lukhokhwe B	112	112x327÷2300	16
Maliki	128	128x327÷2300	18
Musembe	100	100x327÷2300	14
Mukhuyu	105	105x327÷2300	15
Sango	100	100x327÷2300	14
Rehema	124	124x327÷2300	18
TOTAL	**2300**		**327**

To reach individual respondents in each village the researcher used systematic random sampling technique. Using the required sample size from each village and the total study population in a particular village the researcher computed a sampling interval which was then used to determine which woman was to be interviewed at a particular time. The researcher used a table of random numbers to determine which respondent was to be interviewed first.

Sample size determination
In this study, the sample size was determined using the formula by Fisher et al. (1999)

$$n = \frac{z^2 pq}{d^2}$$

Where:
 n=Desire sample size
z=Standard normal deviation given as 1.96 (corresponding to 95% confidence level)
p=41 % (Assumed prevalence rate of utilization of skilled delivery services for Bungoma according to KDHS 2014)
q=1.0-p
d=Degree of accuracy desired, here set at 0.05 corresponding to 1.96

$$n = \frac{1.96^2 \times 0.41 \times (1 - 0.41)}{0.05^2}$$

=381.4
n= 381

Because the study population was less than 10000 then the final estimate of the required sample size (nf) was calculated using the formula:

$$nf = \frac{n}{1 + (\frac{n-1}{N})}$$

Where:

nf= desired sample size (for population of less than 10000)

n= desired sample size when population is greater than 10000

N= estimate of population size

1= constant of correction

Therefore

Nf=381/1+ {(381-1) ÷2300)}

= 381/1.1652

=326.98

=327 respondents

Data collection instruments

A semi-structured interview schedule was used as a data collection instrument because the study population comprised of illiterate and semi-illiterate people. The guide was used to collect information on age, education, marital status, occupation, ethnicity, Institution characteristics, and distance to health facility. The questions also sought opinion on preferred assistance in future in order to improve utilization and service satisfaction

Pretesting of instruments

Pretesting of research instruments was conducted in the neighboring Maliki location. The location was presumed to have similar characteristics as the study area hence ideal for carrying out the pretest. Using a different location from the sampled study location helped avoid re-selecting the respondents during the actual research. According to Mugenda and Mugenda (1999), a sample size of 10-50% for pretesting is acceptable in descriptive research. Therefore, a sample size of 35 women who were not part of the sample was selected and interviewed from Maliki location for pretesting. An analysis was then done to check the clarity of data collection instruments and to identify any gaps and overlaps which was rectified before the actual study was conducted.

Validity of Research Instruments

Pre-testing of the instruments helped to appraise the instruments and check their feasibility in collecting the right information. This enhanced validity by ensuring that the questions are clear and generate the right responses.

Reliability of Research Instruments

Reliability of the data collection instruments was established during the pretest to check the consistency of responses provided by the respondents. Training of research assistants on proper data collection also helped to enhance reliability.

Data collection techniques

Interviewing was used to collect data from mothers that were enrolled in the study. The technique was appropriate for collecting data from the study population because majority of the mothers were either illiterate or semi-illiterate.

Data Management and Analysis

All collected data were confidentially kept safe, processed and edited for accuracy. Qualitative data was written down and analyzed thematically while quantitative data was analyzed with the aid of Statistical Package for Social Scientists (SPSS) computer program. Descriptive statistics such as frequencies and percentages were used to determine proportions on utilization of skilled delivery services. Data was then presented and interpreted in form of tables and graphs.

Findings and Discussions:-

Response rate

A total of 300 women were interviewed representing a response rate of 91%. 25 women were not available in their households during the time of study while two women refused to cooperate with the researcher (Table 2).

Table 2:- Response rate.

Category	Frequency	Percentage
Response	300	91%
Non-response	27	9%
Total	**327**	**100%**

Socio-demographic characteristics
A total of 300 respondents were interviewed during the study where the youngest respondent was 15 years while the oldest was 47 years.Majority 157(52.3%) of the respondents were aged 20-29 and the least 26(8.7%) were aged 20 years and below. More than three quarters 276 (92.0%) of the women who were interviewed were married with 14 (4.7%) being single; a few of them were divorced 6 (2.0%) and widowed 4 (1.3%). When it comes to religion, majority of the respondents 235 (78.3%) embraced Christianity; 17 (5.7%) were Muslims and the rest 48 (16.0%) had no religion. Almost half 144 (48.0%) of the respondents had primary school education; 83 (27.7%) had secondary school education; 45 (15.0%) had either college or university education and 28 (9.3%) had no formal education at all. Farming was the main occupation among the respondents forming 67.0% of the total respondents. It was followed by business 19.3% and lastly formal employment 13.7%. More than half 174 (63.0%) of the respondents' husbands engaged in farming with 24 (8.7%) of them being businessmen and 78 (28.3%) having formal employment. Majority of the respondents 238 (79.3%) earned a monthly salary of less than Ksh10000 with 53 (17.7%) earning Ksh10000-Ksh50000 and 9 (3.0%) earning Ksh50000-100000.None of the respondents was earning more than Ksh100000.Table 3 below presents the findings

Table 3:- Respondents' socio-demographic characteristics.

Variable	Frequency (n=300)	Percentages (%)
Age		
Below 20	26	8.7
20-29	157	52.3
≥30	117	39.0
Marital status		
Married	276	92.0
Single	14	4.7
Divorced	6	2.0
Windowed	4	1.3
Religion		
Christian	235	78.3
Muslim	17	5.7
Without religion	48	16.0
Education level		
No formal education	28	9.3
Primary	144	48.0
Secondary	83	27.7
College/university	45	15.0
Maternal occupation		
Subsistence farmer	201	67.0
Business	58	19.3
Formal employment	41	13.7

Husband occupation		
Farming	174	63.0
Business	24	8.7
Formal employment	78	28.3
Monthly income		
Less10000	238	79.3
10000-50000	53	17.7
50000-10000	9	3.0
Above 100000	0	0

Magnitude of utilization of the various types of delivery care services

The women were asked where they gave birth during their previous pregnancies. Those who utilized skilled delivery care services (health facility delivery) were 148 (49.3%) while 152(50.67%) utilized unskilled delivery care services. Among those who delivered outside health facility 94 (31.3%) delivered at home with the help of relatives, 13 (4.3%) delivered on the way and 45 (15%) of the women delivered under the care of TBAs (Figure 4.1).
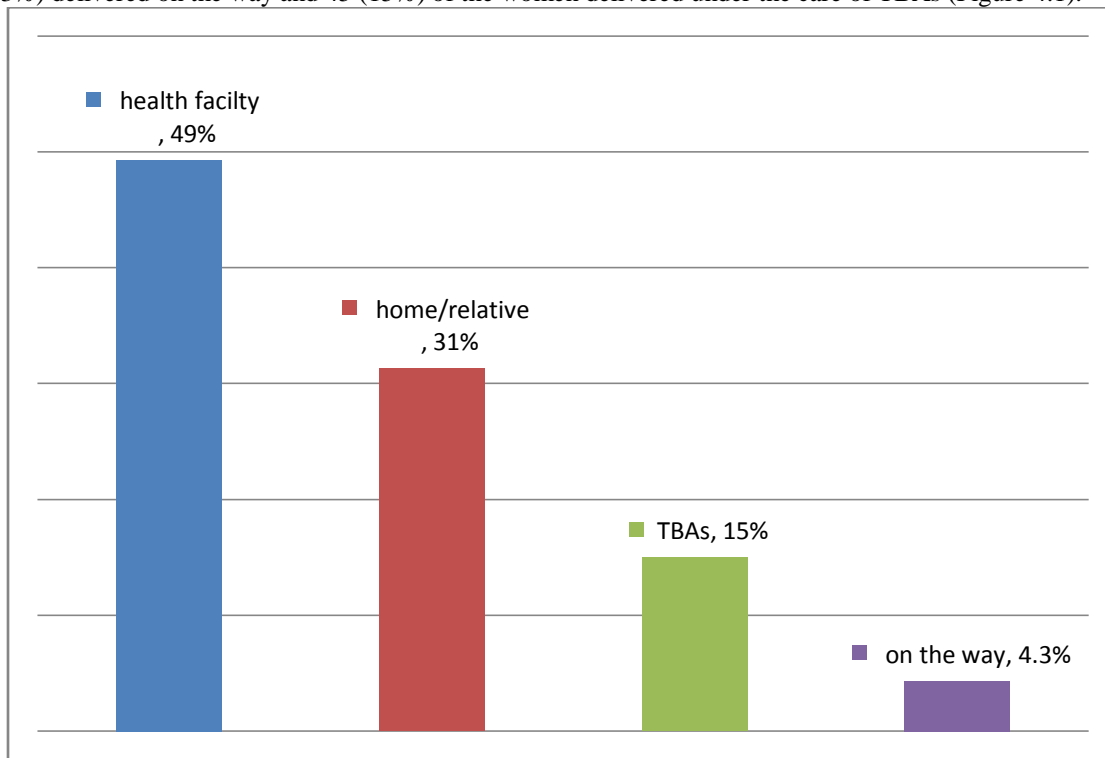
Figure 4:- Place of delivery for women of Mukuyuni Location.

The above results are similar to research done in other countries (Mpembeni et al., 2007; Mrisho et al., 2007). These findings are lower compared to the national proportion for uptake of skilled delivery services that is at 50% for rural women (Ministry of health, 2016). The results show an improvement from 2014 KDHS survey that found 47.8% of women in western region deliver under unskilled attendants but still lower than the WHO estimates. The improvement can partly be attributed to the introduction of free maternal and child health services. More women should be encouraged to seek skilled delivery care services at health facilities. Worldwide, the proportion of live births that occur with the help of a skilled health professional from 2012-2017 was estimated to be 80%. In Europe and America SBA was 98% and 96% respectively while Africa lagged behind at 51% (WHO, 2017). According to KDHS 2014, 61% of women in Kenya gave birth in health facilities

Distance to the health facility

Most of the respondents claimed that the distance from their homes to the health facility was more than three kilometers 161(53.7%), 68 (22.7%) reported that they lived 2-3km, 57(19.0%) lived 1-2km and only 14 (4.7%) were living less than 1km from the health facility (Figure 4.2).
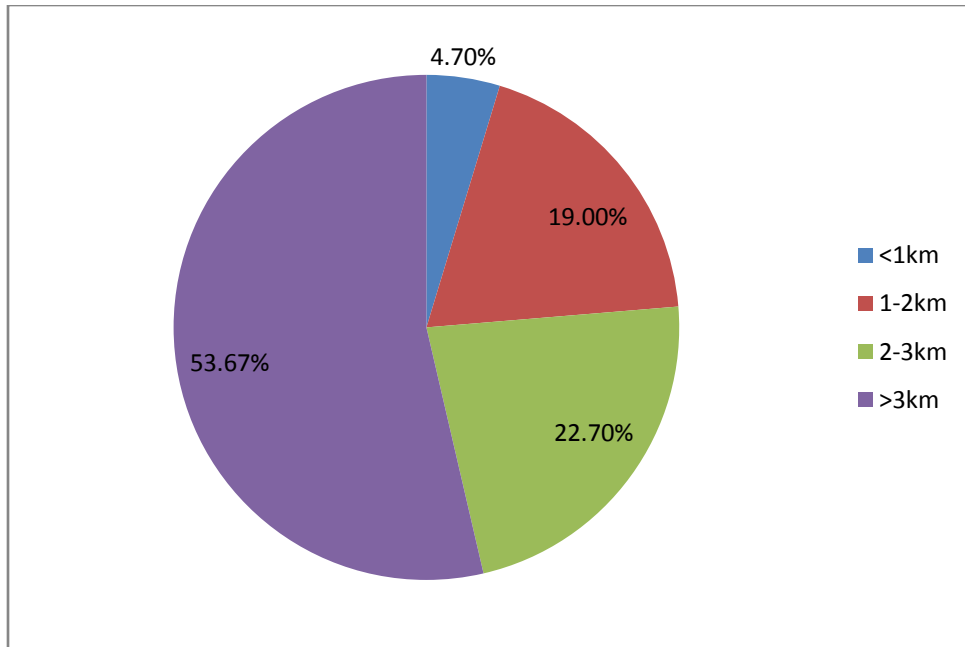
Figure 4.2:- Distance from the respondent's home to the health facility.

Means of transport to the health facility

Most of the women who sought skilled delivery care services used motorbikes to reach the health facility 235 (74.7%), they were followed by those who walked on foot 60 (20.0%), 11(3.67%) used bicycles while only 5 (1.7%) mentioned cars as a means of transport (Figure 4.3).
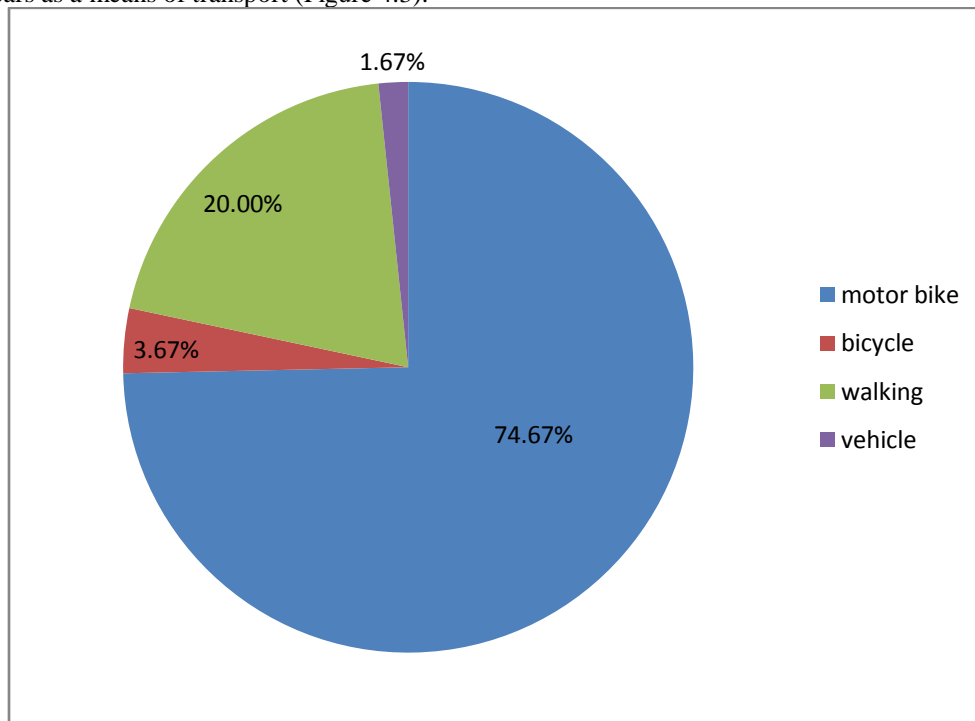
Figure 4.3:- Means of transport used reach the health facility.

Reasons for not seeking skilled delivery care services

Respondents were asked of reasons for their choice of place of delivery. The reasons that were given by the respondents who did not deliver in a health facility were as shown in table 5 below.

Table 5:- Reasons for not seeking skilled delivery care services among the respondents of Mukuyuni location.

Reason for non-skilled delivery	Frequencies
Not near my home	48(31.58%)
Non friendly professionals	30(19.74%)
Unexpected labour	23(15.13%)
Lack of enough privacy in maternity wards	17(11.18%)
Expensive	12(7.89%)
Poor infrastructure	8(5.26%)
Peer pressure	6(3.95%)
Previous deliveries were successful without help of a trained professional	5(3.29%)
Lack of knowledge	3(1.97%)
Total	152(100%)

Majority of the respondents had knowledge about skilled delivery care services though they did not utilize the services fully. Respondents cited varied reasons as to why they preferred to deliver under a traditional birth attendant during their previous pregnancy with most reporting close proximity to TBAs (31.58%), friendly TBAs (19.74%), unexpected labour (15.13%) and enough privacy when giving birth at home (11.18%) as the main reason for delivering outside the health facility.

Majority of the respondents who were above thirty years reported that they did not seek skilled delivery care services because they delivered at home in all other previous pregnancies, and they did not experience any problem after delivery.

Respondents' perception of state of delivery care services provided at the health facility
All respondents were asked to rate the delivery care services provided at health facilities. Majority, 175(58.3%) of the respondents viewed delivery care services that are provided at the health facility as good, 64(21.3%) rated them as fair, 28(9.3%) rated them as poor and only 9(3%) viewed the services to be very good. 24(8%) could not rate the services provided at the health facility since they had never given birth in a health facility. Figure 4.5 illustrates the findings.
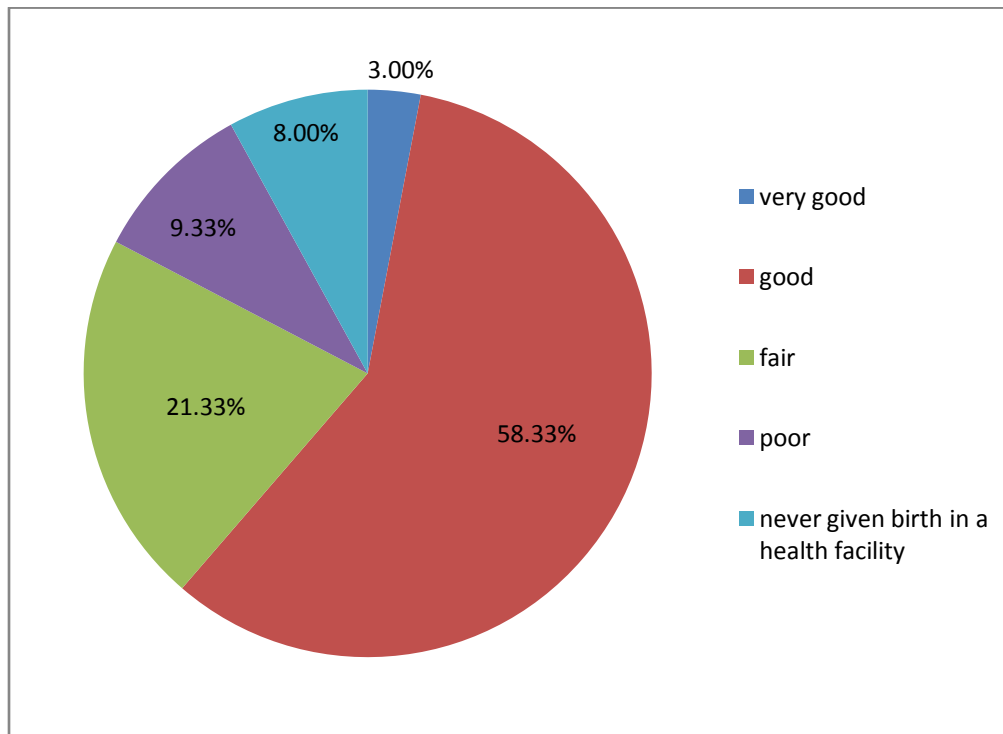
Figure 4.5:- Ratings of skilled delivery care services by respondents.

Those who viewed the services as poor reported the following reasons to be the main factors: abusive language from the health professionals 17(60.7); overcrowding in the wards 6(21.4%); lack of enough trained personnel 3(10.7%) and lack of essential equipment in the health facility such as drugs and beds in maternity wards 2(7.1%) as presented in table 7 below.

Table 7:- Reasons for rating skilled delivery services as poor.

Reasons for rating skilled delivery services as poor	Frequency (%)
Abusive language by nurses	17(60.7%)
Overcrowding	6(21.4%)
Lack of enough trained personnel	3(10.7%)
Lack of essential equipment's in the health facility	2(7.1%)
Total	**28(100%)**

Perceived methods of enhance utilization of skilled delivery care services
This study sought suggestions from respondents on how to improve the current state on utilization of skilled delivery care services.

Table 8:- what can be done to enhance utilization of skilled delivery care services.

Variable	Frequency (%)
Build more health facilities	167(55.6%)
Increase essential equipment like beds	71(23.7%)
Train professionals to be more friendly and holistic	14(4.7%)
Educate community members on importance of skilled delivery	14(5.4%)
Give incentives to the mother during delivery	2(0.7%)
Provide emergency vehicle to ferry pregnant women to hospital	7(2.3%)
Improve road networks for better access	2(0.7%)

As shown in table 8 above 167(55.6%) of the respondents would like the government to build more health facilities, 71(23.7%) would like more essential equipment like beds to be provided in the health facility, 14(4.7%) proposed that health professions be trained on how to provide holistic and friendly services to their clients, 37(12.3% proposed that the community should be educated more on importance of giving birth in a health facility, 2(0.7% would like road networks to be improved for easier access, 2(0.7%) proposed use of incentive to attract more women to deliver in health facilities, 7(2.3%) proposed that providing emergency vehicles to ferry pregnant women to the health facility for delivery would improve utilization of skilled delivery care services.

Some of the suggestions provided have been found to have positive effect elsewhere for instance 'Oparanya care services', a project by Kakamega County government to provide incentives to mothers when they deliver in health facilities has significantly attracted many women to give birth in health facilities (Bungei, 2017). A similar study in Nepal on health service utilization acknowledged the importance of availability of enough health facilities in the country (Baral, 2012). However, other studies argue that mere existence of health facilities does not lead to better utilization since utilization of a health facility is a choice of an individual (MOH, 2008).

Conclusion and Recommendations:-
The proportion of women utilizing skilled delivery healthcare services in Mukuyuni location was 49.3%. The study established that although the results observed shows a positive trend in utilization of skilled services, the current tendency of utilization of skilled delivery care services in the area of study are still below average. Therefore, this is a challenge to both the national and county government.

The county government of Bungoma together with the ministry of health should try to make sure that skilled delivery care services are available at reasonable distance in the rural areas especially the study area and also ensure that health facilities have enough rooms and essential equipment like beds and drugs.

Health care workers who are unfriendly towards expectant mothers should change their attitude and handle their clients in a friendly and holistic manner. This will encourage more women to seek skilled delivery care services at health facilities.

The public health officers in charge of the study area in conjunction with community health volunteers should organize for more outreaches with the aim of mobilizing and sensitizing the community members to change their negativity towards skilled delivery care services and also sensitize women about availability and significance of giving birth with the help of skilled health care professional.

References:-

1. Baral, Y. (2012, December). Maternal health services utilisation in Nepal: Progress in the new millenium. Health Science Journal, 6(4).
2. Bungei, R. K. (2017). Effects of Incentive use "Oparanya care services" in improving skilled delivery of Mothers in Malavz County Hospital, Kakamega County Kenya. IOSR Journal of Nursing and Health services (IOSR-JNHS), 6(5), 47-60.
3. Eijik V., A.M., Bles, H.M., Odhiambo, F., Ayisi, J.G., Blokland, I.E., Rosen, D, H., &Lindblade, K.A. (2006). Use of antenatal services and delivery care among women in rural Western Kenya: a community-based survey. Reproductive Health,3(2).
4. Gitonga, E., &Muiruri, F. (2016). Determinants of health facility delivery among women in Tharaka Nithi county, Kenya. The Pan African Medical Journal, 25(Suppl 2).
5. Kitui, J., Lewis, S., & Darey, G. (2013). Factors influencing place of delivery for women in kenya:An analysis of the Kenya Demographic and Health Survey 2008-2009. BMC Pregnancy and Childbirth, 13 (40).
6. KNBS and ICF Macro. (2010). Kenya demographic and health survey 2008-09. Calverton, Maryland: Kenya National Bureau of Statistics and ICF Macro.
7. Kenya National Bureau of Statistics and ICF International, 2014. Kenya National Bureau of Statistics (KNBS) and ICF International. Kenya demographic and health survey (KDHS) (2014).
8. Ministry of Health (MOH). (2008). Department of health services annual report 2007/2008. Kathmandu.
9. United Nations Childrens Education Fund(UNICEF). (2014). Maternal health. Maternal mortality current status and progress .
10. UNICEF. (2017). Maternal health:Delivery care. Retrieved from UNICEF Website: https://data.unicef.org
11. World Health Organisation(WHO). (2013). Health topics:Health systems. Retrieved November 24, 2013, from https://www.who.int.
12. World Health Organisation (WHO). (2017). Global Healt Observatory data:Skilled attendants at birth. Retrieved June 11 2017, from https://www.who.int.