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Exploring Beliefs and Knowledge about Maternal Health: The Case of Women in Korogocho Slums, Nairobi

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Abstract:
Despite the fact that the government of Kenya has taken several steps to make it easier for all women to access maternal healthcare services (MHS), studies show that utilization of these services continues to be poor in the informal settlements of Nairobi, resulting in adverse pregnancy outcomes. Studies further reveal that utilization of MHS is influenced by beliefs and knowledge about maternal health. In view of the aforementioned, the purpose of this study was to investigate beliefs and knowledge about maternal among women in informal settlements. This study, which was conducted in Korogocho slums, Nairobi, adopted a mixed method approach, which involved a survey and analysis of secondary data. Almost all of the subjects believed that some groups of women were at a greater risk of experiencing maternal morbidity than others, and that maternal health is affected by many different factors, including biophysical, socio-economic to cultural practices. The study established that 42 percent and 54 percent of the respondents were aware of danger signs during pregnancy and delivery respectively, while only 19 percent were aware of danger signs during the post-partum period. Most respondents identified blurred vision, convulsions and difficulty in breathing as the main danger signs during pregnancy. During delivery, the most commonly identified danger signs were severe bleeding, convulsions and fainting. However, during the post partum period, only two fifths of the respondents identified convulsions as a danger sign. The study recommends that the Kenyan National government and the Nairobi County government should conduct awareness campaigns with targeted messages to improve maternal knowledge, with a view to improving maternal health outcomes in informal settlements in Nairobi.

Keywords: Maternal health; Obstetric danger signs; Maternal health knowledge; beliefs on maternal health; Maternal health services; Traditional birth attendants

Introduction

Apart from being the leading cause of neonatal death (Ouyang et al., 2013) and maternal mortality among women in the reproductive age (Say et al., 2014), adverse pregnancy outcomes also affect the general health of the new-born (Filippi et al., 2006). Adverse pregnancy outcomes are also responsible for morbidities and debilitating disabilities such as Pelvic Inflammatory Disease (PID), obstetric fistula and infertility (World Health Organization, 2015a). They can also negatively impact the social and economic standing of women and their families (Filippi et al. 2006; World Health Organization, 2015a).

According to World Health Organization (2006; 2015b), pregnancy outcomes can be greatly improved if expectant women have adequate maternal health knowledge (MHK). Women with adequate MHK are more likely to attend the recommended minimum of four Ante-Natal Care (ANC) clinics during pregnancy, deliver in health facilities under the supervision of trained healthcare practitioners, and receive Post-Natal Care (PNC) from skilled healthcare practitioners for 24 to 48 hours after delivery. Similarly, even if morbidity does occur despite the preventive action, it can be successfully managed if women have adequate MHK since they are likely to be seek treatment from skilled healthcare practitioners in a timely manner, at the onset of any illness, or as soon as any injury occurs, during pregnancy or the post-partum period (World Health Organization, 2006).

Developing countries, of which Kenya is part, continue to report adverse pregnancy outcomes, including miscarriages, still-births, and neonatal and maternal deaths (World Health Organization, 2016). In 2015, more than five million miscarriages, approximately four million still-births, three million neonatal deaths, and more than 300,000 maternal deaths occurred in developing countries, (World Health Organization, 2017). More than two thirds of the adverse pregnancy outcomes occurred in Sub-Saharan Africa (World Health Organization, 2015c). For instance, developing countries accounted for approximately 99 percent of the global maternal deaths, with sub-Saharan Africa alone accounting for roughly 66 percent, followed by Southern Asia at approximately 22 percent. Similarly, more than 4.2 million miscarriages occurred in Sub-Saharan Africa (World Health Organization, 2016).

Even within Sub-Saharan Africa, there are wide disparities in adverse pregnancy outcomes. In Kenya for example, MMR stood at 510/100,000 in 2015, which was lower than the rate for Central African Republic (882/100,000), but higher than the rates of countries like Zambia (224/100,000) and Djibouti (229/100,000). Similarly, in Kenya, the still-birth rate in 2015 was 21.8 deaths per 1,000 live births, while the rate of miscarriage was 22 per 100 pregnancies, which were different from rates in other parts of Sub-Saharan Africa (World Health Organization, 2016). In addition, more than half of all expectant women suffered from serious maternal morbidity in 2015 (WHO et al., 2016). It is however important to note that these estimates are very conservative, because, just like the rest of Sub-Saharan Africa, Kenya does not have a vital statistics registration system (Kiragu, 2014). Therefore, many of the adverse pregnancy outcomes and incidences of morbidity go unreported (Dellicour et al., 2017).

Several studies have attributed the persistent adverse pregnancy outcomes in developing countries to inadequate MHK (Anderson et al., 2015). Inadequate MHK is manifested by low utilization of ANC, delivery and PNC services, and delayed consultation, or failure to consult healthcare practitioners for illness during pregnancy and the post-partum period (Afulani, 2015; Mebratie et al., 2014). For example, while an average of 85 percent of all expectant women made the recommended four or more ANC visits in developed countries between 2010 and 2015, less than 50 percent (49 percent in Sub Saharan Africa and 42 percent in South Asia) attended four or more sessions in developing countrries for the same period (WHO et al., 2016). Furthermore, only 50 percent of all deliveries in developing countries (45 percent in Sub-Saharan Africa in 62 percent in South Asia) occurred in a health facility, compared to 99 percent in developed countries (WHO et al., 2016).

In Kenya, only an average of 47 percent of all expectant women made the recommended four or more visits in 2015 (World Health Organization, 2016). Furthermore, only 61 percent of all deliveries in Kenya were supervised by skilled healthcare practitioners in health facilities between 2010 and 2015 (WHO et al., 2016). The low uptake of MHS is even more pronounced in urban areas in Kenya, of which the study area is part. Available evidence shows that the capital city, Nairobi, is better endowed in terms of MHS, than rural and even other urban areas (Ministry of Health, Government of Kenya, 2015). It would therefore be expected that the city would have very high rates of utilization of MHS. However, this is not the case. For example, more than 40 percent of women in Nairobi did not attend the recommended four or more ANC clinics. Further, approximately 12 percent deliveries in the city occurred at home (WHO et al., 2016).

Further, there are wide disparities even within the city of Nairobi, with informal settlements recording even lower utilization of MHS. For example, in 2015, only approximately 50 percent of all women in the informal settlements of Nairobi made the recommended four or more ANC visits, and only 30 percent received post-partum care within two days of delivery (Chege & Mbilu, 2015).Not surprisingly, informal settlements in Nairobi register adverse pregnancy outcomes due to the low uptake of MHS (African Population and Health Research Center, 2014). More than 60 percent of women in Nairobi's informal settlements suffered from serious maternal morbidity in 2015(WHO et al., 2016). MMR for informal settlements was 706/100,000 in 2015(WHO et al., 2016), which was higher than the city's average (261/100,000) and the country's average (510/100,000) for that year. Further, in 2014, the rate of stillbirths in the informal settlements of Nairobi was 93 deaths per 1,000 pregnancies, which was higher than the national average of 21.8 per 1,000 live births. Other adverse pregnancy outcomes in the study area include high rates of miscarriages (31/100), low birth weight, and poor survival chances for the new-born (World Health Organization, 2017).

The purpose of this study was to explore beliefs and knowledge about maternal health in informal settlements of Nairobi. Specifically, the study sought to: find out the commonly held beliefs and knowledge about risk factors for maternal morbidity among women in the study area; find out the commonly held beliefs and knowledge about causes of maternal health complications among women in the study area; and to determine the knowledge of obstetric danger signs among women in the study area

2. Methodology

This study was conducted in Korogocho, which is one of the more than 200 informal settlements in Nairobi County, the capital city of Kenya (Government of Kenya, 2011). Korogocho is located approximately 12 kilometers North-East of the city center, and occupies an area of approximately one square kilometer in size (African Population and Health Research Center, 2014). It is made up of seven villages namely: Highridge, Grogan, Ngomongo, Ngunyumu, Githaturu, Kisumu-Ndogo/Nyayo and Korogocho (refer to map of study area in Appendix V).

Selection of the study area was informed by studies which reveal that among all informal settlements in Kenya, Korogocho has persistently recorded the highest adverse pregnancy outcomes (African Population and Health Research Center 2014; World Health Organization, 2016). For instance, in 2015, the study area had the highest MMR in Nairobi County (706/100,000 compared to the County's average of 261/100,000) (WHO et al., 2016). In 2014, the rate of stillbirths was more than 100/1,000 while other informal settlements had 93/1,000 (Government of Kenya, 2014; World Health Organization, 2016). These adverse outcomes were registered despite the fact that MHS are available in the study area (Government of Kenya, 2015). This descrepancy is an indication that residents of Korogocho have low MHK. In view of this, it was therefore timely and worthwhile to undertake this study in Korogocho in order to establish the social determinants of MHK in informal settlements. The choice of the study area was further motivated by the composition of the population. Korogocho has a relatively stable and settled population, since most of the residents have lived in the area for many years, as opposed to other informal settlements in Nairobi where the population is highly mobile (Beguy et al., 2015; Emina, Beguy, and Zulu(2011). This is an important factor in establishing long term trends in MHK since the study area has persistently registered adverse pregnancy outcomes.

The study population comprised of all women between the ages of 18 and 49 yearswho had delivered in the one-year preceding data collection, who were the main respondents, and all healthcare practitioners involved in the provision of MHS, who were key informants. According to the Kenya National Bureau of Statistics, women aged between 18 and 49 years constituted 69 percent of the total population of women in Korogocho (Government of Kenya, 2014) which translates to approximately 62,000 women. While childbearing age as defined by WHO includes all women aged between 15 and 49 years, the minimum age for this study's population was guided by the age of majority as defined by the constitution of Kenya, which is 18 years (Government of Kenya, 2010). This was due to ethical considerations regarding collection of data from minors.

For purposes of triangulation, the study also collected data from healthcare practitioners in four cadres (doctor, clinical officer, general nurse and midwife) in the study area. According to the KNBS, there were approximately 300 healthcare practitioners in these cadres in the study area (Government of Kenya, 2014). These cadres were purposively selected because according to Ministry of Health, Government of Kenya (2014), Ministry of Health, Government of Kenya (2015) and Netherlands Enterprise Agency (2016), healthcare practitioners in these cadres are the ones involved in the provision of MHS in Kenya. The healthcare practitioners were drawn from two public health centers, one mobile clinic, six private, and six non profit facilities (Government of Kenya, 2015).

The sampling unit for this study was individual women and key informants. The sample size for the study was 560main respondents, which wasarrived at using the formula

$n = \dfrac{z^2 pq}{d^2}$ From Babalola (1998)where: n is the minimum sample size;z is the normal deviate corresponding to the desired confidence level (1.96); p is the proportion of people in the study population thought to have the key characteristic being measured;q is the opposite of p (1-p); andd is the degree of accuracy desired (0.05). In addition, data were collected from 46 healthcare practitioners.

The questionnaire served as the primary data collection instrument for this study, and was administered to the main respondents. Thus, data collected through the questionnaire was largely quantitative. A focus group discussion guide was developed to collect qualitative data from the main respondents, which was conducted in seven focus group discussion sessions. According to Westenholz-Bless & Achola (1990), FGDs allow researchers to collect qualitative data that can provide explanations for quantitative data already obtained. Furthermore, FGDs provide an opportunity for validation of data collected through questionnaires since sessions were conducted in a relaxed atmosphere that allowed discusasnts to open up freely (McLaren & Hawe, 2000). A Key Informant Interview (KII) schedule was developed for healthcare practitioners. It elicited information on experiences of pregnancy complications. The validity and reliability of data collection instruments was ascertained by employing the test-retest method.

After data collection, all quantitative data were entered into a spreadsheet for cleaning, which involved cross-checking for accuracy, consistency, completeness, data entry errors and screening for missing outlier values. Raw data was used to clarify errors in the spreadsheet. After cleaning, data were exported into the Statistics Package for Social Sciences (SPSS) version 16, for analysis. Descriptive statistics, including frequencies, percentages and means were used to describe the characteristics of the respondents, and have been presented in frequency tables. Pie charts and bar graphs have also been employed to aid in the visual appreciation of the variables under study. Descriptive statistics were applied to explain the findings for Objective One. Percentages and averages were used to assess the indicators of the dependent variable, MHK, by analyzing the utilization of ANC, delivery, PNC and treatment of illnesses in health facilities. The results were used to establish the level of MHK in the study area, based on a framework developed by Vaghella et al., (2014). MHK was defined as a three-category variable, ranging from high, to medium and low.

Descriptive statistics were used to describe the characteristics of the respondents in relation to the independent and intervening variables, while inferential statistics where was used to determine the relationship between variables.

3. Results and Discussion

This study sought to establish from the respondents their beliefs and knowledge about maternal health. Specifically, data were obtained to establish beliefs about MHS in the study area, the need for obtaining MHS in health facilities, and their beliefs relating to maternal healthcare. Respondents were also asked about their knowledge of obstetric danger signs. The response rate for the questionnaire was 91.43 percent. However, it should be noted that the sample size for the questionnaire had already catered for attrition

Regarding beliefs, more than half of the respondents believe that women should visit health facilities for MHS only when they experience complications. Almost all of the subjects believed that some groups of women were at a greater risk of experiencing maternal morbidity than others. For example, most of the participants believe that women who deliver more frequently and those who have delivered many times are at a greater risk of suffering from complications, as shown in Table 1.

Awareness and Perceptions	Number of Respondents N = 512	
	Frequency	Percentage
Beliefs		
Women should only visit a health facility if they have complications	392	76.56
Maternal morbidity is more likely to occur during		
a) Pregnancy	206	40.23
b) Delivery	319	62.30
c) Post-partum period	111	21.68
Believe that the following groups of women are at a greater risk of experiencing complications than others (free listing, unprompted responses)		
a) Women who deliver frequently (inadequate child spacing)	498	97.27
b) Poor women	481	93.95
c) Women who have delivered many children	472	92.19
d) Women who are not prayerful	403	78.71
e) Women who don't eat well during pregnancy	376	73.44
f) Non-educated women	369	72.07
g) Women with small physiques	321	62.70
h) Younger women	296	57.81
i) Older women	271	52.93
j) Women who have committed abominations	201	39.26
k) Women who don't fulfil certain cultural rights	197	38.48
l) Women with large physiques	194	37.89
m) Women who don't exercise during pregnancy	132	25.78
n) Rich women	78	15.23
Mother and baby should not leave the home for at least one week after delivery	432	84.38
It is important to receive ANC at a health facility supervised by a skilled provider	402	78.52
It is important to deliver at a health facility supervised by a skilled provider	391	76.37
Complications are normal during pregnancy	389	75.98
Post-partum recovery is influenced by cultural and supernatural factors	315	61.52
It is important to receive PNC at a health facility supervised by a skilled provider within one week of delivery	121	23.63

Table 1: Knowledge and Beliefs Related to Maternal Health

The data in Table 1 also shows that most respondents believe that maternal health is affected by socio-economic factors. According to the respondents, the major socioeconomic factor believed to influence maternal morbidity was poverty, whereby 93.95 percent of them believed that poor women are more likely to suffer from maternal health complications, as opposed to only 15.23 percent who believe that rich women are also likely to experience complications. Participants to the study also perceive education as being an important determinant of maternal morbidity. Approximately three quarters of the participants (72.07 percent) believe that women who are less educated are more likely to suffer from maternal complications. Interestingly, prayer was seen as a preventive measure, with 78 percent of the respondents saying that women who prayed frequently were less likely to suffer maternal complications. Some of the respondents also believe that women who do not perform certain cultural rights are more likely to experience maternal complications. Biophysical factors like age and physical state are also believed to influence maternal health and the possibility of suffering maternal complications. Table 1 also reveals that most of the respondents believe that while it is important to receive ANC and to deliver at a health facility, only a small percentage (23.63 percent) felt that it was necessary to receive post-partum care from a skilled provider at a health facility.

A majority of the respondents believed that pregnancy is an ordinary biological process, and that women should only visit health facilities when they develop complications, as shown in Table 1. As one respondent put it:
"Women have been falling pregnant and delivering babies since the time of Adam and Eve. There were no hospitals then. Our mothers gave birth to us without any problem. So, unless I am sick, there is no need to go to hospital." (33-year-old respondent from Ngunyumu village)This was echoed by another respondent, who said:
"Pregnancy is a normal condition. Complications during pregnancy are also normal since the body is supporting a new human being. Therefore, complications will naturally occur due to changes in the body."(26-year-old discussant from Highridge village) This study also made an interesting observation. As results in Table 1 shows, most of the respondents believe that maternal mortality is most likely to occur during pregnancy than any other period. Only 8 percent of the respondents believe that death is likely to occur during the post-partum period. This could be a probable explanation for the high rates of health facility delivery and very low uptake of PNC services, as reported Otengah and Shivachi (2017). Qualitative data revealed that most women in the study area perceive child-bearing to be a dangerous undertaking. As one of the discussants put it: "The main challenge during pregnancy is discomforts, which are normal but can be quite severe.

But when it comes to delivery, that is another thing altogether. It is a major hurdle which once crossed, one must thank their God. This is because during delivery anything can go wrong and within no time, you hear the woman has died." (30-year-old participant from Ngomongo village)This perception may be related to empirical findings which show that during delivery, obstetric complications can develop into life threatening emergencies very quickly (Adams et al., 2010; Garenne, 2011; Killewo et al., 2006). The study reveals that most women acknowledge that maternal health is affected by many different factors, including biophysical, socio-economic to cultural practices. This explains why most of the respondents believe that obstetric complications may be caused by factors such as not praying frequently, committing abominations, failure to perform certain rights, and other supernatural factors, as shown in Table 1. This is an important discovery since, according to several studies; perceptions about the cause of medical conditions are a key determinant of healthcare-seeking behaviour in general (Ajzen & Fishbien, 1980; Andersonet et al., 2015; Fabrega, 1973). Perceptions about the cause of obstetric complications would therefore explain why many respondents preferred to receive MHS from TBAs. TBAs have a tendency of taking a holistic approach while providing MHS. This holistic approach caters for both the biophysical, emotional and cultural concerns of their clients. This argument concurs with the findings of Byrneet al.,(2016), who observed that MHS provided by TBAs adheres to the traditional practices of their clients, which makes their services more appealing. Other studies concur that the holistic approach of TBAs takes into account the cultural conceptualization of maternal health (Akunga et al., 2014; Kaingu et al., 2011; Roggeveen et al., 2013).

Table 1 also reveals that approximately two thirds of the respondents associate post-partum complications with supernatural factors. The results show that most of the respondents believe that a woman ought to stay indoors for at least one week after delivery in order to protect herself and the new-born child from evil spirits. Qualitative data confirmed that this was one of the main considerations that prevented women from receiving PNC at health facilities. As one of the TBAs said: "After delivery, a woman must stay in the house for at least one week. This will ensure that those who want to harm her or the baby are not able to see her. During this one-week period, we also restrict the visitors who come to see the baby, since not everyone who comes to see the baby means well for the family." (63-year-old TBA in Kisumu Ndogo village)
Several studies have argued that the post-delivery restrictions imposed by cultural practices are actually designed to ensure that both the child, whose immunity is still very low at this time, and her mother are not exposed to infections (Byrne et al., 2016; Kaingu et al., 2011; Shukria, 2015). The study sought to establish the respondents' level of awareness of obstetric danger signs. Respondents were required to list the danger signs known to them during pregnancy, delivery and the post-partum period. The study established that 42 percent and 54 percent of the respondents were aware of danger signs during pregnancy and delivery respectively, while only 19 percent were aware of danger sighs during the post-partum period, as indicated in Table 2.

Key Danger Signs	Awareness of Danger Sign	
	Aware (%)	Not Aware (%)
Danger Signs During Pregnancy		
Bleeding	41.99	58.01
Severe headaches	2.93	97.07
Fainting	41.02	58.98
Blurred vision	71.09	28.91
Convulsions	84.96	15.04
Swelling of feet and arms	6.05	93.95
Difficulty in breathing	56.05	43.95
Severe exhaustion	9.96	90.04
Severe abdominal pain	17.97	82.03
Increased or reduced fetal movements	50.98	49.02
Premature breaking of water	78.91	21.09
Mean	41.99	58.01
Danger signs during labour		
Severe bleeding	78.91	21.09
Convulsions	75.98	24.02
Fainting	50.98	49.02
Retained placenta	46.09	53.91
Labour lasting longer than 12 hours	21.09	78.91
Mean	54.61	45.39
Danger signs in the post-partum period		
Severe bleeding	21.09	78.91
Severe headaches	6.05	93.95
Difficulty in breathing	19.92	80.08
Convulsions	39.06	60.94
Severe weakness	8.01	91.99
Mean	18.83	81.71

Table 2: Obstetric Danger Signs Known to Respondents

The results in Table 2 show that awareness of obstetric danger signs was higher during delivery than it was during pregnancy and the postpartum period. Contrary findings were observed in other studies in Ethiopia, where the level of knowledge was higher during the post-partum period (26 percent), followed by pregnancy (19 percent) and then delivery (15 percent) (Kaso & Addisse, 2014). However, as the data illustrates, generally, the level of awareness was especially low in the study in Ethiopia. Further, the study in Ethiopia was conducted in a rural setting, where, according to the authors, level of knowledge of obstetric danger signs was lower than that in urban areas. Another study in Nigeria found that the level of awareness among women in informal settlements in Lagos was higher during pregnancy (69 percent) than it was during delivery (30 percent) and the post-partum period (25 percent) (Oni et al., 2016).

The higher awareness of obstetric danger signs during pregnancy, as shown in Table 2, could be related to the perception among most of the respondents that mortality is likely to occur during delivery than any other period. Table 2 shows that slightly more than half (51 percent) of the respondents believe that maternal death is likely to occur during delivery, as opposed to 40 percent and 8 percent who believe it is likely to occur during pregnancy and the post-partum period respectively.

The data in Table 2 also shows that most respondents identified blurred vision, convulsions and difficulty in breathign as the main danger signs during pregnancy. During delivery, the most commonly identified danger signs were severe bleeding, convulsions and fainting. However, during the post partum period, only two fifths of the respondents identified convulsions as a danger sign. None of the other known danger signs were identified by more than a fifth of the respondents.

4.Conclusions and Recommendations

The study concluded that beliefs and knowledge about on maternal health in the study area is not adequate. Based on this, the study recommends that the Kenyan National government and the Nairobi County government should conduct awareness campaigns with targeted messages to improve maternal knowledge, with a view to improving maternal health outcomes in informal settlements in Nairobi.

5. References

i. abrega, H. (1973). Towards a Model of Illness behavior. Medical Care, 470-484.
ii. Adams, M., Alexander, G., Kirby, R., & Wingate, M. (2010). Perinatal Epidemiology for Public Health Practice. New York: Springer.
iii. African Population and Health Research Center. (2014). Population and health dynamics in Nairobi's informal settlements: report of the second Nairobi cross-sectional slums survey (NCSS) 2012. Nairobi: APHRC.
iv. Afulani, P. (2015). Determinants of maternal health and healthcare-seeking behavior in sub-Saharan Africa: The role of quality of care. PhD Thesis Submitted to the University of California, Los Angeles.
v. Ajzen, I., & Fishbien, M. (1980). Understanding Attitudes and Predicting Social Behaviour. New Jersey: Anglewood Cliffs.
vi. Akunga, D., Menya, D., & Kabue, M. (2014). Determinants of Post-natal Care Use in Kenya. African Population Studies 28(3), 1447-1459.
vii. Anderson, G., Park, H., Sanders, L., Jesus, N., & Akufuor, M. e. (2015). Healthcare-seeking Behaviour for Maternal Morbidity in Sub_Saharan Africa: Trends and Challenges. Chicago: Bruner and Sons Inc.
viii. Beguy, D., Elung'ata, P., Mberu, B., Oduor, C., Wamukoya, M., B, N., & Ezeh, A. (2015). HDSS Profile: The Nairobi Urban Health and Demographic Surveillance System (NUHDSS). International Journal of Epidemiology, 1-10.
ix. Byrne, A., Caulfield, T., Onyo, P., Nyagero, J., Morgan, A., Nduba, J., & Kermode, M. (2016). Community and provider perceptions of traditional and skilled birth attendants providing maternal health care for pastoralist communities in Kenya: a qualitative study. BMC Pregnancy and Childbirth 16(43). doi:DOI 10.1186/s12884-016-0828-9
x. Chege, J., & Mbilu, T. (2015). Utilization of maternal health care services in Kenya: An analysis of the patterns and determinants of maternal healthcare use. Retrieved March 19, 2016, from SST: http.www.sociologyandscience/maternalhealth/Africa
xi. Dellicour, S., Aol, G., Ouma, P., Yan, N., Bigogo, G., Hamel, M., . . . Desai, M. (2017). Weekly miscarriage rates in a community-based prospective cohort study in rural western Kenya. Retrieved May 20, 2017, from BMJ Open: http://www.bmjopen.bmj.com/
xii. Emina, J., Beguy, D., & Zulu, E. (2011). Monitoring of health and demographic outcomes in poor urban settlements: Evidence from the Nairobi Urban Health and Demographic Surveillance System. Journal of Urban Health 88(3), 200-218.
xiii. Fillipi, V., Ronsmans, C., Campbell, O., Graham, W., Mills, A., Koblinsky, J., & Osrin, D. (2006). Maternal health in poor countries: the broader context and a call for action. Retrieved May 11, 2016, from The Lancet: http://www.thelancet.com
xiv. Garenne, M. (2011). Estimating Obstetric Mortality from Pregnancy-Related Deaths Recorded in Demographic Censuses and Surveys. Studies in Family Planning 42(4), 237-46.
xv. Government of Kenya. (2010). The Constitution of Kenya . Nairobi: Government Printer.
xvi. Government of Kenya. (2014). Demographic Health Survey of 2014. Nairobi: Government Printer.
xvii. Government of Kenya. (2015). Kenya health facilities list with services as at November 13. Retrieved November 11, 2016, from ehealth: http://www.ehealth.or.ke/facilities/downloads.aspx

xviii.   Kaingu, C., Oduma, J., & Kanui, T. (2011). Practices of traditional birth attendants in Machakos district, Kenya. Ethnopharmacol 13(7), 495–502.

xix.   Kaso, M., & Addisse, M. (2014). Birth preparedness and complication readiness in Robe Woreda, Arsi Zone, Oromia Region, Central Ethiopia: A cross-sectional study. Reproductive Health 11(55), 106-117.

xx.   Killewo, J., Anwar, I., Bashir, I., Yunus, M., & Chakraborty, J. (2006). Perceived delay in healthcare-seeking for episodes of serious illness and its implications for safe motherhood interventions in rural Bangladesh. Journal of Health Population and Nutrition 24(1), 403-412.

xxi.   Kiragu, A. (2014). Maternal morbidity in Kenya:Measurement, contributions and limitations of DHS data. REVUE QUETELET/QUETELET JOURNAL, 121-145.

xxii.   Mebratie, A., Van de Poel, E., Yilma, Z., Abebaw, D., Alemu, G., & Bedi, A. (2014). Healthcare-seeking behaviour in rural Ethiopia: evidence from clinical vignettes. doi:10.1136/bmjopen-2013-004020

xxiii.   Ministry of Health, Government of Kenya. (2015). Kenya Master Facilities List, 2015. Retrieved from http://www.ehealth.or.ke/facilities/downloads.aspx

xxiv.   Netherlands Enterprise Agency. (2016). Kenyan Healthcare Sector: Opportunities for the Dutch Life Sciences & Health Sector. The Hague: Netherlands Enterprise Agency.

xxv.   Obermeyer, J., Hunt, P., Ahmed, M., Mohammad, S., Fitzpatrick, J., & Pius, P. (2015). Patterns of Utilization of Maternal Health Services in Developing Countries: An Analysis of Sub-Saharan Africa and South Asia. Retrieved March 1, 2016, from Lancet: http://www.thelancet.com.

xxvi.   Oni, B., Odukoya, O., Okunowo, A., Ojo, O., & Abatan, Y. (2016). A comparative assessment of the awareness of danger signs and practice of birth preparedness and complication readiness among pregnant women attending rural and urban general hospitals in Lagos State. Sahel Medical Journal 206(105), 165-180. Retrieved from www.smjonline.org: http://www.smjonline.org

xxvii.   Ouyang, F., Zhang, J., Betran, A., Yang, Z., Souza, J., & Merialdi, M. (2013). Recurrence of Adverse Perinatal Outcomes in Developing Countries. Bulletin of the World Health Organization 91(5), 357-367.

xxviii.   Roggeveen, Y, Birks, L., van Kats, J., Manyama, M., Hatfield, J., & Bunders, J. (2013). Low untilization of skilled birth attendants in Ngorongoro Conservation Area, Tanzania: a complex reality requiring action. Health 3(5), 71–83.

xxix.   Say, L., Chou, D., Gemmill, A., Tuncalp, Ö., Moller, A., Daniels, J., & Gulmezoglu, A. (2014). Global Causes of Maternal Death: A WHO Systematic Analysis. Retrieved January 11, 2016, from Lancet Glob. Health: http://dx.doi.org/10.1016/S2214-109X(14)70227-X.

xxx.   Shukria, S. (2015). Healthcare-seeking behaviours in northern Kenya. Qualitative Health Research 18:747. doi: 10.1177/1049.90. Retrieved from Qualitative Health Research.

xxxi.   Vaghella, J., Ahmed, V., Bruce, C., Stephenson, K., Ravindra, K., & Patel, J. (2014). Reducing Maternal Mortality: Evidence Based Approach. Mumbai: Raj Press.

xxxii.   Westenholz-Bless, C., & Achola, P. (2007). Fundamentals of Social Research Methods: An African prspective. Cape Town: Juta Legal and Academic Publishers.

xxxiii.   WHO; UNICEF; UNFPA; &World Bank . (2016). Trends in maternal mortality: 1990 to 2015. Geneva: World Health Organization.

xxxiv.   World Health Organization. (2006). Standards for Maternal and Neonatal care. Birth and emergency preparedness in antenatal care. Integrated management of pregnancy and childbirth (IMPAC). Geneva: World Health Organization.

xxxv.   World Health Organization. (2015a). Social Determinants of Health. Retrieved March 12, 2016, from WHO: http://www.who.int/social_determinants/en/

xxxvi.   World Health Organization. (2015b). WHO Recommended Interventions for Improving Maternal and Newborn Health. Retrieved April 26, 2016, from World Health Organization: http://www.who.int/maternal_child_adolescent/documents/who_mps_0705/en/

xxxvii.   World Health Organization. (2015c). Global Strategy for Women's, Children's and Adolescents' Health: 2016-2030. Geneva: United Nations.

xxxviii.   World Health Organization. (2016). World Health Statistics 2016: Monitoring health for the SDGs. Geneva: World Health Organization.

xxxix.   World Health Organization. (2017). World Health Statistics. Retrieved April 6, 2017, from http://www.who.int/gho/maternal_health/en/