

Strategic interventions in reducing obstetric risks associated with late age pregnancy among childbearing women in Kakamega County, Kenya

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Abstract: Maternal age at conception seems to have a significant correlation with pregnancy and childbirth outcomes. Classically, very young childbearing women (less than 18 years) and above 35 years have been classified as high-risk categories. Strategic interventions to reduce obstetric risks found among these childbearing women seem to be lacking. There is need to reduce the effect of obstetric risks associated with late age pregnancy outcomes among the elderly primigravidas by evaluation of existing strategic interventions.

Methods; Cross sectional survey research design was used, childbearing women and selected hospital personnel in 3 selected hospitals and tertiary institutions in Kakamega County were sampled. Purposive and stratified sampling strategies were used. The sample size was determined using Fisher's formula, which was 177 childbearing women attending clinic in the 3 health facilities, 177 child bearing women from tertiary institutions and 30 medical personnel from the various institutions. Data collection was carried out using structured questionnaires, focused group discussions, interview guides and observation checklists of the medical equipment in the selected hospitals. Quantitative data was analyzed using SPSS and correlation techniques. Qualitative methods were used to analyze data from focus group discussions and key informant interviews.

Results: Healthcare facilities in the county were not fully equipped to deal with the adverse complications that come up with late age pregnancy.

Conclusion: Hospitals should be adequately equipped with adequate personnel and facilities such as Intensive Care Unit/Neonatal Intensive Care Unit to cater for this emerging trend.

Keywords: Elderly Primigravidas, Intervention, maternal, birth outcomes.

1. INTRODUCTION

Every year globally, an estimated 810,000 women die as a result of pregnancy or childbirth related complications (WHO, 2017). Developing regions account for approximately 99% (302, 000) of the global maternal deaths with Sub-Saharan Africa alone accounting for roughly 66% (201, 000), followed by Southern Asia 33% (66,000) (WHO, 2015). As at 2015, the two regions with the highest MMR were sub-Saharan Africa (546; UI 511 to 652) and Oceania (187; UI 95 to 381) (WHO, 2015). The highest incidence of maternal and perinatal mortality occurs around the time of birth with majority of deaths occurring within the first 24 hours after birth (WHO, 2014). The estimated lifetime risk of maternal mortality in high-income countries is 1 in 3300 in comparison with 1 in 41 in low-income countries (WHO, 2015). More than 1,000 women die for every 100,000 births in Eritrea, Ethiopia, Mozambique and Rwanda. In many other countries in the region more than 500 women die for every 100,000 births; while in other regions, women have a considerably lower lifetime risk: one in 50 in South Asia and North Africa, and one in 160 in Latin America (World Bank, 2011; WHO, 2014).

In Kenya, maternal mortality has remained high, at 400-600 deaths per 100,000 live births over the past decade, resulting in little or no progress being made towards achieving SDG 3.1 which is to reduce the global maternal mortality ratio to less than 70 per 100 live births (WHO, 2020). At the current rate of progress, Kenya fell short of achieving the mortality reduction target of 147 per 100,000 live births in 2015. Similarly, the proportion of births attended by skilled health personnel (62 percent) was below the target of 90 percent by 2015. A case in point is Kakamega County which in 2014 was ranked fifth amongst 15 counties with the worst reproductive maternal neonatal child and adolescent health statistics in Kenya (Kagweni Micheni, 2017). A rising trend that is quickly adding to this phenomenon is the late age at which women are getting their first pregnancy, indicating an early phase of a generation of women who are increasingly delaying childbirth until their late 30s and early 40s (Hafsa, 2011). Despite the fact that all maternal deaths are preventable given proper medical surveillance and interventions, not much attention is being paid to this rapidly emerging problem of late age pregnancy whose consequences have been shown to be very disastrous (World Bank, 2011).

Hospitals are the crucial units which should take up the responsibilities of mitigating the risks which elderly primigravidas are exposed to. Pragmatic reality in most developing countries dictates the need for wide-scale implementation of evidence-based, cost-effective health programs and interventions to improve child health outcomes (Zulfiqar *et al*, 2005). Developing strategies toward ending preventable maternal mortality (EPMM) in time will meet the health and social needs of women and communities, and support the goal of people-centric health care. Moreover, achievement of SDG 3.1 (WHO, 2020), is critically dependent on a substantial reduction on neonatal and maternal mortality over the next decade. (2015).

2. MATERIALS AND METHODS

Study Site and design

This study was a cross-sectional survey carried out to evaluate strategic interventions in reducing risks associated with late age pregnancy among childbearing women. The research was carried out in Kakamega County in Western Kenya. Kakamega County is one of the four counties in the western region and one of the 47 Counties in the Republic of Kenya. The fertility rates among childbearing women as shown by its highest percentage household size is 4-6 members at 43%. 23% of the population are women of reproductive age.

Study Population

The units of analysis included childbearing pregnant women attending clinics and childbearing women from tertiary educational institutions aged 18-27 years, 28-34 years and 35 years and above in various health facilities. The institutions included staff and students from Masinde Muliro University of Science and Technology, Sigalagala Technical Training Institute, Mukumu Nursing School and Kakamega Medical Training College (KMTC), all within Kakamega County.

Sampling strategy and sample size

Purposive sampling, quota sampling and stratified random sampling designs were employed. The sampling frame of the study was drawn from 3 major hospitals namely Kakamega County Referral Hospital, St Mary's Mission hospital in Mumias and Lumakanda District hospital. Stratified random sample size was determined using Fisher's (2004) formula, for childbearing women attending clinic and in tertiary educational institutions. The formula was selected because it is reliable, efficient, and flexible and ensured a proper depiction of the study population. The total sample size was 384 (calculated) which accounted for non-response and attrition. This consisted of total sample of 177 pregnant women from hospitals and 177 childbearing women from tertiary education institutions and 30 key informants from the medical facilities.

Data Collection

Secondary data was collected through various reports and publications. Primary data comprised of both qualitative and quantitative data. The researcher collected primary data from the respondents using focused group discussions, questionnaires and interviews as shown in table 3.6

Table 1: Instruments for data collection, sample size and sampling strategy for all respondents in study sites in Kakamega County, Kenya.

Study Population Unit	Sampling strategy	Sample Size	Instruments
Doctors	Purposive	3	Interview
Nurse in – charges	Purposive	3	Interview
Medical Superintendents	Purposive	3	Interview
Nurses/midwives	Quota	18	Interview
Pregnant women (Primigravidas) attending clinic	Stratified random Sampling	177	Questionnaires and FGD guide
Child bearing women in tertiary education institutions	Stratified random sampling	177	Questionnaires and FGD guide
Policymakers, MOH, KKG County	Purposive	3	Interview

Source: Researcher (2015)

3. FINDINGS

Study findings revealed that the strategic intervention measures to reduce obstetric risks should be : awareness creation, improving the health facilities, provision of incubators, blood transfusion exchange resource, intensive health care services (ICU) and ratio of mother to midwife.

Creation of awareness

Majority of the key informants mentioned that proper antenatal care and creation of awareness were the main strategic interventions in reducing risks associated with the late age pregnancy among childbearing women in Kakamega County, Kenya.

From the results, women in childbearing age suggested that creating awareness is one of the intervention measures in reducing fatal risks of late age pregnancy. Awareness creation should be based on actors like proper medical screening, proper ante natal care, proper diet and encouragement of early delivery to reduce health risks associated with late age pregnancy (Bako *et al*, 2013).

Improvement of the hospital facilities

During the data collection exercise, the researcher visited the 3 key hospitals which formed the research sites and observed the hospitals' equipment, their availability, efficiency and quantity. It noted that the delivery couches were not adequate and more couches were needed.. Some of the most important facilities that require improvement include the patients' delivery couches, the intensive care units both for adults and the neonates, incubators for neonates and blood transfusion resources.

Availability of Intensive care units for adults (ICU) and neonates (NICU)

Lumakanda District hospital and St Mary's Hospital, Mumias did not have intensive care units for both the mother and the baby. In Kakamega County hospital, the intensive care unit for adults was under construction and was not operational. Training of staff who were to work in the ICU was underway. None of the hospitals had a neonatal intensive care unit for the newborns.

Availability of incubators

These results showed that there is a lack of incubators in hospitals as observed in the Kakamega County's health facilities. The incubator ratio was 1:3 for each of the babies. 3 babies were sharing one incubator at any given time, instead of the recommended ratio of 1:1 i.e. one baby using one incubator at a given time. Thus, that there was a deficit of two incubators. This shows that they were only 33.3 % adequate. There is need to have more incubators to be installed in the hospitals. This will ease the need and quality of the incubators to take care of the needs of all the infants requiring specialized care.

Blood transfusion and Exchange Services

At least 60% of the health facilities in Kakamega County are adequate in blood transfusion exchange services. However, this is not adequate as 40% of the facilities were shown to be lacking in blood transfusion exchange resources.

Sanitation in the health facilities

Cleanliness and sanitation play a big role in reduction of diseases in health facilities especially maternity unit. A Chi-Square value ($\chi^2_{2,0.05} = 16.65$) showed that there was a significant ($P < 0.05$) variation in the responses pertaining sanitation of health facilities. Out of the 3 hospitals observed and interviews with the medical personnel, results show that there were inadequate medical supplies i.e., antiseptics, gloves and syringes 15 (50%), physical facilities e.g. ambulances and oxygen supply 9 (30%) and waste disposal techniques 6 (20%). None of the hospitals had infection control committees and an ongoing programme for staff training on infection control. A high proportion of health facilities reported that staff routinely washed their hands before and after sterile procedures, but only very few sections of the facilities were observed to have 24-hr running water and only two thirds had soap and antiseptic solutions in delivery and operative theatre areas. Although more than 90% of the health facilities reported that they use sterile gloves routinely, unused sterile gloves were found in only 60% of these facilities, and recycled gloves in some sections of the hospitals.

The ratio of mid-wife to mother in labour in health facilities

A Chi-Square value ($\chi^2_{1,0.01} = 16.67$) showed that there was highly significant ($P < 0.01$) variation in the responses. Interviews with the hospital staff from the 3 hospitals revealed that there was an acute shortage of midwives which has greatly reduced the quality of services in the hospitals. 33.33% of the medical staff reported that the ratio of midwife to a mother in labour was 1:5 (one midwife to five mothers), while only 16.67% reported that the ratio was 2:1 (two midwives to one mother) which is the laid down requirement. In addition, monitoring of a mother in labour was reported to be inadequate in all the hospitals due to shortage of staff. The hospitals relied a lot on students and nurses on locum, to provide additional assistance but not specialized care. This scenario posed higher obstetric risks to the elderly primigravidas who due to their age required specialized attention during delivery.

4. CONCLUSION AND RECOMMENDATIONS

The existing interventions in Kakamega County hospitals do not measure the required standards and these include: lack of awareness, understaffing/inadequate skilled birth attendants, lack of adequate facilities and medical supplies which call for a need for a health education programme to child bearing women and provision of essential obstetric care facilities and other requirements to improve maternal and new born health in Kakamega County. The following recommendations were made based on the findings and the conclusions of the study; Affirmative action on women education that enables them to balance education, career and reproductive life should be coupled with courses on marriage and family life in tertiary institutions, Health education to child bearing women in their early life stages (adolescent) will be of great importance in ensuring that effects of late age pregnancies are mitigated. Tax incentives, health insurance and genetic counseling should be provided by both levels of government, county and national. Policies on child adoption should be made easier for couples who do not have children, Creation of awareness on the dangers of late age pregnancy on childbearing women should be emphasized. Governments have a responsibility to ensure that every woman has access to quality maternity care, including prenatal and post-natal services; a skilled birth attendant to assist at childbirth; special care and referral services in the event serious problems arise; and maternity protection in the workplace. Hospitals should be well equipped with medical facilities such as ICU / NICU, medical supplies and adequate skilled birth attendants whose required ratio is 2:1, i.e. two midwives to one woman in labour so that they will be able to handle the risks encountered at late age pregnancy.

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