

OBAFEMI AWOLowo UNIVERSITY, ILE-IFE, NIGERIA.

LIBRARY
Olowo University
NIGERIA

INAUGURAL LECTURE SERIES 268

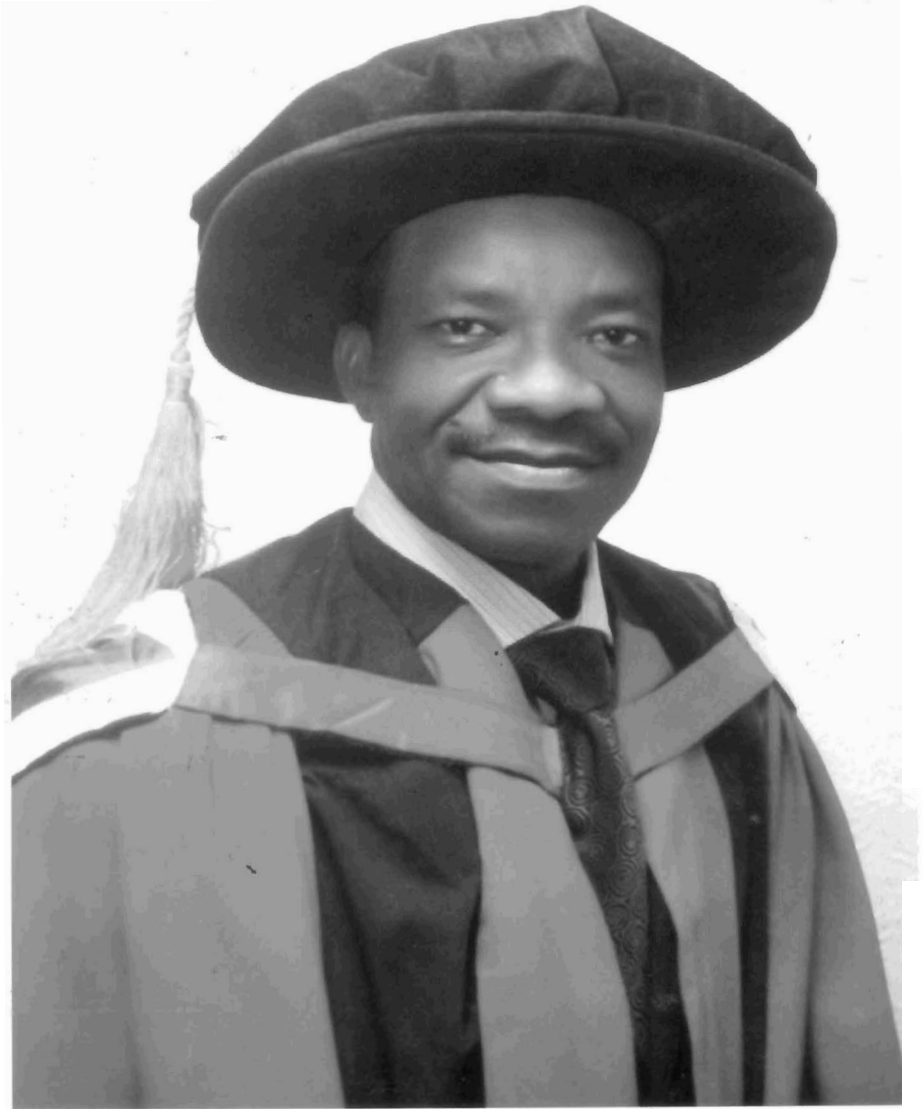
**OPENING THE WOMB OF LIFE: AN
ADVENTURE OF AN OBSTETRICIAN
AND GYNAECOLOGIST**

By

ERNEST OKECHUKWU ORJI
Professor of Obstetrics and Gynaecology



OBAFEMI AWOLowo UNIVERSITY, ILE-IFE, NIGERIA.



ERNEST OKECHUKWU ORJI
Professor of Obstetrics and Gynaecology

OPENING THE WOMB OF LIFE:AN ADVENTURE OF AN OBSTETRICIAN AND GYNAECOLOGIST

UNIVERSITY LIBRARIAN
Obafemi Awolowo University
ILE-IFE, NIGERIA

**An Inaugural lecture Delivered at Oduduwa Hall,
Obafemi Awolowo University, Ile-Ife, Nigeria.**

On Tuesday 9th September, 2014

By

**Ernest Okechukwu Orji
Professor of Obstetrics and Gynaecology**

Inaugural lecture Series 268

OBAFEMI AWOLOWO UNIVERSITY PRESS, 2014

ISSN 0189-7848

Printed by

**Obafemi Awolowo University Press Limited
Ile-Ife, Nigeria**

PREAMBLE

Mr. Vice Chancellor Sir, Principal Officers of the University, Members of the University Council, Members of Senate, Provosts, Deans, Directors, Heads of Department, Invited guests, Members of the Press, Distinguished Ladies and Gentlemen, “a journey of a thousand miles begins with a step”. I am therefore grateful to Almighty God for guiding every step culminating to this Lecture: the 268th Inaugural Lecture of Obafemi Awolowo University, Ile-Ife, Nigeria and the third from the Department of Obstetrics, Gynaecology and Perinatology. The first and second lectures of the Department were delivered by Professor S.O. Ogunniyi and Professor O. B Fasubaa, respectively. So I remain very thankful to God not only for enabling me to deliver the third Lecture, but also for fixing it TODAY, which is my Wedding Anniversary, and for guiding my adventure thus far as an Obstetrician and Gynaecologist.

Mr. Vice Chancellor Sir, the path of an Obstetrician and Gynaecologist in Nigeria is always tortuous, emotionally tasking and physically demanding. To come thus far therefore calls for thanksgiving not only to God but also to men and women who taught, mentored and collaborated with me as I journeyed through the womb of life in the Ivory Tower. Certainly, I have come thus far by standing on the shoulders of giants. To this end, I must acknowledge Professor Friday Okonofua, Professor Solomon Ogunniyi, Professor Uchenna Onwudiegwu, Professor Olusola Fasubaa, Professor Ebenezer Ojofeitimi, Professor Adesegun Fatusi, and many others for their early influences on my life as a researcher in the field of Obstetrics and Gynaecology.

My interest and adventure in Obstetrics and Gynaecology started when I was a medical student rotating through the Department of Obstetrics and Gynaecology at the University of Nigeria, Nsukka.

The experience I gathered during this period laid the foundation and served as a template for my future pursuit in this specialty. My National Youth Service Corps Year (NYSC), which was spent in Osogbo, Osun State, also gave me more impetus to pursue a career in “O &G”, as it is often called.

My primary assignment during the service year was to work at State Specialist Hospital Osogbo (Now LAUTECH Teaching Hospital). During this time, I was involved in a community service every Thursday visiting all the health centres in Egbedore Local Government Area, Osun State. I believe that the service was divinely arranged; it brought me face to face with reproductive health challenges facing the rural communities in the Local Government. The community service was so dear to the then Local Government Chairman that he released one of his official cars and a driver to me. Mr. Vice Chancellor Sir, the zest and zeal I brought into the service won the admiration of the staff of the NYSC which culminated to my being given State Honour Award with automatic employment by the Osun State Government.

I gladly accepted the employment offer as the Medical Officer-in-Charge of General Hospital, Ipetu-Ijesa and knowing that to whom much is given, much is expected, I threw myself without reservation into the challenge of confronting death and diseases. And while the battle raged, it became very clear to me that life will always triumph over death if reproductive health care is given the priority it deserves. This conviction further animated and propelled my desire for a postgraduate training in the field of Obstetrics and Gynaecology. And subsequently, it compelled me to leave the Osun State Government Hospital for Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, to embark on a residency training programme.

My residency training remains a watershed in my career. The passion and perseverance I put in during the training did not go unnoticed. It received approbations from my peers, consultants and professors. So great has been my dedication and commitment to

patient care that it attracted a letter of commendation from Professor Roger Makanjuola, the then Chief Medical Director of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, who saw the potential in me and facilitated my employment as lecturer I in this University, when he became the Vice Chancellor. Since then, I have neither relented nor rested on my oars. Rather I have re-energized, perspired and aspired to acquire my academic desire; and thus, I rose through the ranks to become a professor in 2008. Mr. Vice Chancellor Sir, it is therefore the curiosity of a medical student, the zeal of a medical officer, the tenacity of a resident doctor, the sustained penchant for details of a professor, the unalloyed commitment of a steward and the passion of a humanitarian for safe delivery that collectively gave birth to this Lecture titled **Opening the womb of life: an adventure of an Obstetrician and Gynaecologist**.

INTRODUCTION

The framing and formation of this lecture invokes both symbolic and instrumental meanings that nicely blend together and simultaneously reinforce each other to reflect the challenges of couples, conception, birth, baby and mother. Thus the meanings collectively convey not just the research experience of the Inaugural Lecturer but also the experiences of everyone born of a woman, especially those who gave birth or were born in places with limited medical facilities. For these categories of individuals **opening the womb of life** is a great adventure. Maternal health problems arising from such an adventure has become a public health issue of global importance requiring urgent actions to stem the tide.

Pregnancy is a privileged biosocial function entrusted to women to ensure the survival of our human species; it supposes to be a nine month journey. But in African folktale, a woman about to give birth, tells her older children, 'I am going to the sea to fetch a new baby, however, the adventure is long and dangerous and I may not return'. And she is right; pregnancy can be a journey of no return.

The landscape of maternal health in Nigeria eloquently bears witness to this fact. According to UN estimates, Nigeria remains one of the 10 most dangerous countries in the world for a woman to give birth: the maternal mortality ratio in Nigeria is estimated at 630 maternal deaths per 100,000 live births. Of the estimated 529,000 maternal deaths that occur globally every year, Nigeria contributes approximately 10%, although its population size is only about 2% of the global population figure (Cooke & Tahir 2013). With estimated 40,000 mothers dying annually from pregnancy-related causes, Nigeria has the second highest maternal mortality burden in the world (USAID 2012, WHO *et al* 2012). Another 1 to 1.2 million Nigerian women suffer from long term disabilities from pregnancy and birth related causes annually. Nigerian women have an average total of 5.7 births in their life time with each pregnancy exposing them to maternal complications. Over a lifetime a woman's risk of dying in pregnancy is 1 in 29 compared to the sub-Saharan average of 1 in 39 and the global average of 1 in 180. In developed regions of the world, a woman's risk of maternal death is 1 in 3,800 (WHO 2012)

For those of us practising in the field of Obstetrics and Gynaecology, maternal mortality is neither words nor numbers. It is women who have names. It is about human faces, seen in the throes of agony, distress, and despondency; faces that may live forever in our organic memory and continue to haunt our dreams. Hence, there is no greater tragic event than a maternal death, which has been increasing at an increasing rate in Nigeria.

But there is good news, Mr. Vice Chancellor Sir, the trend is reversible! Ensuring that couples have their babies without sorrow has been the mission of my research, community service and teaching since I joined the OAUTHC and OAU.

Soon after my employment in the University, I was invited to join the Curriculum Development Committee of Bill & Melinda Gates/Obafemi Awolowo University Ile-Ife Partnership Programme. The collaboration with Departments of Community Health,

Demography and Social Statistics and other related departments was very fruitful. It enabled my adventure into the field of research on maternal health and family planning to move from hospital and university environment to the community, thus fulfilling the mandate from 'Gown to Town'. Also through the collaboration, I was able to attend some Summer Courses in Johns Hopkins University, Baltimore, Maryland, USA where I had tutelage on Research Methods in Reproductive Health and Reproductive Health and Development.



Figure 1: Showing memories of the training in Research Methods in Reproductive Health



Figures 2: Showing memories of the training in Reproductive Health and Development

During these courses, I had a training session on Family Planning at the Planned Parenthood Federation of America, Baltimore, Maryland. My first community outreach in family planning education and condom distribution, and HIV testing took place in down town Baltimore, Maryland. The community service brought me face to face with women of different classes, colours and creeds facing diverse maternal challenges. I also had face to face contact with violent drug addicts, down-trodden Afro-Americans with poor reproductive health indices. Memories of these experiences are shown in Figure 1 and 2.

The experiences have further honed my skill and deepened my resoluteness to pursue a career in reproductive health to a logical conclusion. To make maximum impact in the field of Obstetrics and Gynaecology, I have focused my research on Maternal Health and Family Planning Education which formed the bulk of today's lecture. It is divided into the following captions:

- a. When the womb of life opens normally: Challenges and interventions,
- b. When the womb of life refuses to open ,
- c. Planning the opening of the womb of life,

When the womb opens normally: Challenges and interventions

“When the womb opens normally” implies the conception of a baby or babies. The beginning and end of a pregnancy is mediated by maternity care, which aims at monitoring the pregnant woman during pregnancy, labour and in the puerperium to ensure the delivery of a healthy baby and mother with an intact reproductive capacity. This duty in early times, throughout the world, was confined exclusively to women. Men were rigorously excluded by cultural dynamics. And having men to deliver women was equivalent to offending female modesty. Thus, the presence of male physicians and surgeons was very rare and only occurred once a serious complication had taken place and the midwife had

exhausted all measures to manage the complication (Boley 1991, Donnison 1988). Many midwives of that time bitterly opposed the involvement of men in childbirth. Some male physicians also opposed the involvement of medical men like themselves in midwifery, and even went as far as to say that obstetricians only undertook midwifery solely for perverse erotic satisfaction (Donnison 1988)).

The obstetricians however argued that their involvement in midwifery was to improve the process of childbirth. The involvement of obstetrician and gynaecologist in the process of baby delivery has improved the maternal health and thus reduced maternal mortality and morbidity, which were extremely high when midwives (mostly with no organized training by then) were the only managers of the process. This claim is supported by several case studies. One of such cases occurred in 1809 when Ephraim McDowell of Kentucky, USA was called to deliver a 38 year old woman of suspected twins after midwives have tried and were exhausted. The "twins" however turned out to be a large ovarian tumor (Ackerkaecht 1982).

The introduction of forceps in childbirth and vacuum delivery in the 18th century, following medical communities' better understanding of anatomy of the uterus and the physiological changes that take place during labour, gave obstetricians an added edge in managing difficult labours. A further accomplishment in the profession occurred in the 19th century with the advancements in asepsis and anaesthesia. This paved the way for the mainstream introduction and later success of the caesarean section (Willson 1988).

The influences of these advancements have been reshaping and remaking maternal health significantly in developed nations since 20th century. Thus, maternal and perinatal mortality rates of the developed nations have declined significantly. This is unfortunately not the case in Nigeria as highlighted in some of our research works (Orji 2000, 2001, 2002, Orji *et al* 2002, Kuti *et al* 2003). While at least 75% of women go through pregnancy and childbirth

without major complications, for about 25 % of others, the process is hazardous. Our research findings revealed that maternal mortality and morbidity is a major problem in Nigeria. They also showed that the major causes include haemorrhage, infections, eclampsia / pre-eclampsia, unsafe abortions, obstructed labour among others (Ezechi *et al* 1999, Orji *et al* 2000, Ndukwe *et al* 2004, Makinde *et al* 2009). The contributions of these factors to maternal mortality by percentage at the global level are shown in Figure 3 and in Nigeria in box 1.

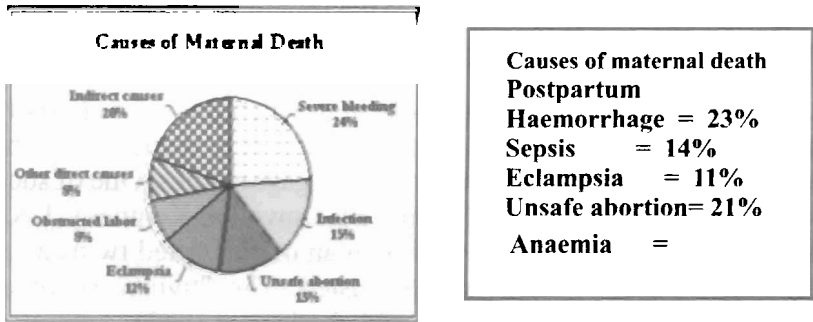


Figure : Distribution of the causes of maternal mortality by percentage. **Box 1:** Distribution of the causes of maternal mortality by percentage in Nigeria

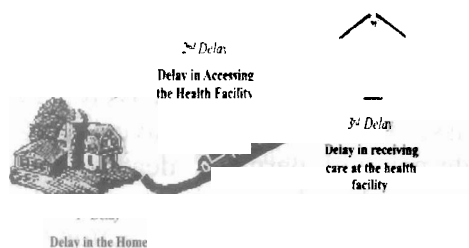
Source: World Health Organization (2012) Source FMOH (2010)

Furthermore, our findings revealed that the factors, which may collectively be responsible for at least 80% of maternal deaths, do not act in isolation. They are reinforced by remote antecedent factors. For instance, not all pregnant women who decide to seek care at a medical facility in Nigeria arrive in time to be treated. Some die while trying to get there. Data on such deaths are, however, scarce. In one of our early studies, we tracked the history of brought-in maternal deaths over a 5-year period (1995–99) at Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria (Orji *et al* 2002). Reasons given for late presentation include: inability to obtain transportation on time (41.7%), inability of the health-care staff to detect an obstetric emergency early

enough and refer to an appropriate centre (33·3%), inability of the referring hospital to perform an emergency caesarean section (33·3%), fear of caesarean section (25%), unwillingness of drivers to travel by night (25%) and no money to pay for hospital costs (16·7%). In addition to this, we discovered that many patients who booked and received antenatal care at the teaching hospital still delivered in inappropriate places such as mission houses which have strong associations with increased maternal and perinatal deaths. The reasons for mission house delivery included financial constraints (41%), fear of possible caesarean section (46%), industrial action by health-care workers (39%), and transport difficulty at night (26%) (Orji *et al* 2001, Ezechi *et al* 1999). The Maternal Mortality Ratio among these women who delivered in mission houses within these period were 978 per 100 000 live births compared to 271 per 100 000 live births for booked patient during the study period in the hospital. The Perinatal Mortality Rate also was 118 per 1000 total births compared with 91 per 1000 total birth for booked patients.

The various reasons given from the studies above are summarized in three phases of delay presented pictorially and texturally in Figure 4 and Box 2, respectively. The threefold delay, which are delay in seeking care, delay in reaching care and delay in receiving care, constitute the socioeconomic and politico-cultural milieus in which particular maternal and perinatal deaths unfold. It also reflects the technoscape and technicality of the milieus wherein a given maternal death or perinatal death occurs. While there are numerous factors that contribute to maternal mortality, the interval between the onset of obstetric complication and its outcome is very critical. If prompt, adequate treatment is provided, the outcome will usually be satisfactory; therefore, the outcome is most adversely affected by delayed treatment.

WHY WOMEN DIE IN PREGNANCY & CHILDBIRTH: THE THREE DELAYS



Phase I delay (Delay in Seeking Care)

- * Lack of information and inadequate knowledge about signs of complications of pregnancy and danger signals during labour
- * Cultural practices that restrict women from seeking health care

Phase 2 delay (Delay in reaching care)

- * Poor citing of health facilities
- * Poor roads and communication network
- * Poor community support

Phase 3 delay (Delay in receiving care)

- * inadequate skilled attendants
- * inadequate equipment and supplies
- * Lack of constant electricity supplies
- * Lack of blood
- * Strike action by different health workers

Figures and Box 2: The pictorial and textural representations of three phases of delay that contribute to maternal and perinatal deaths. Source: Adapted from Thaddeus and Maine (1994)

In other words, although maternal or perinatal death may be linked with immediate factors such as haemorrhage, infections, eclampsia / pre-eclampsia, abortions and obstructed labour, it also reflects what went wrong at the level of seeking care, the level of reaching care and the level of receiving care. Thus, each death tells a particular story, and each story shows what could have been done better at various levels of the delay (Orji *et al* 2002, Orji *et al* 2007).

So when family and community members with gloomy faces mourn a nursing mother, a baby or both, who never-lived, meet their doctors, their overt and covert question is always- "doctor what happened?" They are simply seeking to hear the story the death of their beloved one tells. I will devote the remaining portion of this section to reflect on stories that maternal and perinatal

deaths do tell as well as my interventions to stop these deaths in our environment.

Mr. Vice Chancellor Sir, I wish to state unequivocally that my interventions have changed what would have been sorrowful stories of death to soothing songs of birth in Osun State in particular, and in our nation Nigeria at large. Our research findings showed that one of the common stories told by most maternal and peritonal deaths in Ile-Ife is that of injudicious management of labour occasioned by the inability of some health workers to detect early the abnormal progress of labour (Orji *et al* 2007). Early detection of abnormal progress of labour by the use of partograph will prevent prolonged labour and its attendant risks of postpartum hemorrhage and sepsis, eliminate obstructed labour, uterine rupture and its sequelae, all of which are the major causes of maternal mortality and morbidity in our environment. But then, in Nigeria, only tertiary health facilities use the partograph on a regular basis and this contradicts the World Health Organization (WHO) recommendation that the partograph should be used in all labour wards and health facilities (UNFPA 2002, Orji *et al* 2002). Unfortunately in peripheral maternity centres where most deliveries took place and where most of the mismanaged labour cases occurred, health workers in these centres know little, if any, about the use of partograph in labour management.

Mr. Vice Chancellor Sir, our first intervention at community level was therefore to introduce the use of partograph in labour management at six maternity centres in Ife Central Local Government Area. The intervention study was conducted in Ife Central Local Government Area owned maternity centres with the headquarters at Enuwa. This area was chosen because it accounts for the highest number of obstetric emergency referrals received in the Obafemi Awolowo University Teaching Hospital Ile-Ife, Osun State. And I wish to announce to this audience that this singular intervention has saved the lives of many women and their babies across the health centres. The centres included Enuwa Maternity Centre, Gbalefefe Health Centre, Abewela Health Centre, Ile-

Kenani Health Centre, Igboya Health Centre, and Sabo Health Centre. Most of these centres were manned by Community Health Extension Workers (CHEWS) and few Nurses. While experiences with training and the use of partograph among physicians and midwives have been widely reported, experiences with CHEWS are relatively uncommon (Orji *et al* 2007).

Prior to this intervention CHEWS had never been trained to use partograph in Nigeria despite the fact that they monitor more labouring women in Nigeria compared to doctors and trained midwives. This training is therefore a pioneer work for this cadre of health care providers in Nigeria. The gains registered from the use of partograph at hospital level are likely to be even greater at the level of health centres and maternities which rely on referral hospitals for emergency obstetric interventions. More objective criteria of delay in labour and a practical and methodological way of monitoring the progress of childbirth by using partograph would be a significant contribution to greater safety and would be a welcome aid to reduce the uncertainties and anxiety of health professionals. Data in Table 1 showed that our intervention effort trained 56 personnel in the six maternity centres. The trainees included 1 medical doctor (1.8%), 4 nurse/midwives (7.1%), and 51 community health extension workers (91.1%)

Table 1: Showing the distribution of trained health workers by maternity centres.

Maternity Centres	Number of staff trained	Percentage
Enuwa Maternity Centre	33	58.9
Gbalefefe Health Centre	8	14.3
Abewela Health Centre	5	8.9
Ile-Kenani Health Centre	4	7.1
Igboya Health Centre	3	5.4
Sabo Health Centre	3	5.4

Source: Orji *et al* (2007)

Data in Table 2 showed the pre-intervention knowledge and use of partograph by the workers. Only 3 (5.4%) had ever heard of partograph, and also only 3 (5.4%) had ever seen a partograph while only one of them (a nurse/midwife) had been trained formally in the use of partograph. None of the trainees had ever used a partograph since the time they commenced working with the health centres in the town.

Table 2: Pre-intervention knowledge and use of partograph by the workers

Knowledge and use	Yes (%)	No (%)
Ever heard of partograph	3 (5.4)	53 (94.6)
Ever seen a partograph	3 (5.4)	53 (94.6)
Ever trained in the use of partograph	1 (1.8)	55 (98.2)
Ever used a partograph	-	56 (100)

Source: Orji *et al* (2007)

The introduction of the partograph was preceded by an intensive period of training in its use by facilitators who were consultant obstetricians. The training consisted of didactic lectures, practical demonstrations and hands on training. It thus, covers the cognitive, affective and psychomotor domains of the trainees, as shown in Figures 5 and 6.



Figures : The Inaugural Lecturer teaching nurse/midwives and CHEWs on the principle of use of the partograph



Figure : The Inaugural Lecturer inspecting the plotting of Partograph by nurse/midwives and CHEWs

The first aim of our study was to assess whether a training programme for Primary Health Care (PHC) workers of various categories engaged in delivery services would result in comparative performance with regards to correct completion of the partograph and use in decision-making. We hypothesized that if exposed to effective training, CHEWs would use the partograph competently to monitor labour. We further hypothesized that the performances of CHEWs would not significantly differ from those of nurse/midwives if exposed to the same type of training. Our findings from the partographs plotted showed no statistically significant differences between the performances of nurse/midwives and those of CHEWs regarding proportion of partograph forms completed, proportions plotted accurately, and use of partograph in decision-making ($P > 0.05$). This showed that midwives as well as CHEWs within the PHC system can be effectively trained to use the partograph competently. This is relevant to address maternal morbidity and mortality in resource-constrained settings of developing countries where the presence of nurse/midwives is scarce and CHEWs handle most deliveries.

Mr. Vice Chancellor Sir, after this training, we went further to determine the impact of our training on the incidence of prolonged labour, of augmented labour, and of operative delivery over a period of seven months after the training .We also determined whether appropriate intervention based on the partograph reduced maternal and perinatal complications (Orji *et al* 2008). Our findings showed that the use of partograph was associated with increase in transfer in labour , reduction in the duration of labour, obstructed labour, postpartum hemorrhage and genital sepsis ($p \leq 0.01$).The use of partograph was also associated with reduced rate of perinatal mortality and neonatal asphyxia ($p \leq 0.01$).

Table 3. Evaluation of impact of Partograph on complication of labour and sequalae

Variables	Before introduction	After introduction	Chi-Square	P value
Total cases (100%)	242 (%)	242 (%)		
Transferred in labour	14 (5.8)	31 (12.8)	2.49	0.013
Duration of labour >12hrs	45 (18.6)	9 (3.7)		0.0001
Obstructed labour	19 (7.9)	2 (0.8)	3.50	0.0001
Neonatal asphyxia	32 (13.2)	6 (2.5)	4.87	0.01
Perinatal mortality	10 (4.1)	2 (0.8)	2.05	0.0001

Source: Orji *et al* (2007)

We concluded that the introduction of partograph at peripheral health units managed mostly by community health extension

workers and few nurses and midwives resulted in reduction in prolonged and obstructed labour with a concomitant reduction in maternal and perinatal mortality and morbidity. Based on the findings, we recommended that:

- (1) Medical schools, midwifery schools and schools of health technology should be encouraged to teach the principles and use of the partograph.
- (2) Partograph audits at maternity units should be performed routinely to monitor the unit's quality of care.
- (3) Because the partograph has been modified a number of times, in-service training is essential to make sure that health attendants and midwives skills and understanding of the partograph is updated.

Mr. Vice Chancellor Sir, the second story that maternal and perinatal morbidity and mortality do tell here in our environment is that of the misuse of Oxytocin in labour management. Oxytocin misuse in labour is a major contributor to maternal and perinatal morbidity and mortality. Our studies clearly showed that misuse of oxytocin in particular is a major contributor to uterine ruptures and maternal deaths in Ife-Ijesha administrative health zone (Orji *et al* 2002, Orji 2001). Figures 7 showed ergometrine injection, oxytocin injection, and misoprostol tablets while Figure 8 showed the Inaugural Lecturer and his team battling to repair a ruptured uterus caused by the misuse of oxytocin.



Figure 7: Ergometrine injection, oxytocin injection and misoprostol tablets



Figure 8: The Inaugural Lecturer and his team battling to repair a ruptured uterus caused by the misuse of oxytocin

Before now, there was controversy regarding proper initial dose of oxytocin and mode of increment. We studied duration of labour and neonatal outcomes using both arithmetic and geometric

increases in oxytocin infusion dosage at induction of labour (Durodola *et al* 2005). Our results showed that geometric increases in oxytocin infusion significantly shortens the induction delivery interval and reduces the incidence of failed induction. This method was therefore popularized in our centre.

Although the third stage of labour is usually uneventful, several significant complications may be encountered that may lead to maternal morbidity and mortality, especially primary postpartum haemorrhage. We investigated various methods of reducing the incidence of postpartum haemorrhage with the use of oxytocics such as oxytocin, ergometrine and misoprostol

Firstly, we compared the effect of prophylactic use of oxytocin and ergometrine in management of the third stage of labour in a prospective randomized study of 600 women assigned to receive either oxytocin or ergometrine in the third stage of labour. (Orji *et al* 2008). The results showed that there were no significant differences between the 2 groups in the risk for retained placenta, manual removal of placenta, or need for additional oxytocics.

Oxytocin was shown to be as effective as ergometrine at reducing the incidence of postpartum hemorrhage, but without the undesirable side effects of nausea, vomiting, and elevated blood pressure associated with ergometrine ($p \leq 0.01$). A routine use of Oxytocin has since been introduced in our practice.

Secondly, we compared 400 ug oral misoprostol with 10 IU intramuscular oxytocin in the active management of the third stage of labour. In a prospective randomised controlled clinical trial, 200 parturients at term who had vaginal delivery were randomly assigned into two groups: oral misoprostol and intramuscular oxytocin, after the delivery of the baby and the clamping of the umbilical cord (Afolabi *et al* 2008). Results of our research showed that oral misoprostol appeared to be as effective and as safe as intramuscular oxytocin in the active management of the third stage of labour. Misoprostol has since been introduced in our third stage of labour management. Mr Vice Chancellor Sir, the resultant effect

of these interventions is that the incidence of postpartum haemorrhage had reduced in our centre and in other centres where our research recommendations have been adopted (Badejoko *et al* 2012).

Mr. Vice Chancellor Sir, my research findings, teaching and community services also deal with the issues of caesarean operations. Unarguably maternal and perinatal deaths often tell stories of actions and inactions in the theatre. Caesarean section, an important surgery to make motherhood safer, came under focus in many of our research works (Fasubaa *et al* 2000, Orji *et al* 2001, Orji *et al* 2003, 2007, 2008, 2010; Loto *et al* 2009, 2010). Figures 9 and 10 showed the Inaugural Lecturer and his team performing Caesarean sections in theatre.



Figure 9: Inaugural lecturer and his team delivering baby's head at Caesarean section in theatre



Figures 10: The Inaugural Lecturer and his team clamping the cord after delivering the baby alive

Surgery is inevitable if we must reduce maternal and perinatal mortality and morbidity. While caesarean section is widely embraced and utilised in developed countries, much aversion, miseries, misconception, fear, guilt and anger still surround the operation in developing countries, especially among the Yoruba of southwestern Nigeria (Fasubaa *et al* 2000; Orji *et al* 2001). Our studies indicated that one of the reasons given by women for delayed presentation in labour or for patients brought –in with uterine rupture or brought-in maternal deaths is due to aversion for caesarean section (Orji *et al* 2001, 2002). Other reasons included the desire to achieve a natural vaginal birth, fear of surgery, morbidity and deaths from the operation, prolonged hospital stay, perceived high cost of hospital bills and limitation of reproductive potentials (Loto *et al* 2009, 2010).

Given these reasons, **Mr. Vice Chancellor Sir**, we conducted many studies to discover how to make caesarean section safer as well as improve its acceptability in southwestern Nigeria. We researched into the mode of delivery of fetal head at caesarean section for obstructed labour. The mode of delivery of impacted head at caesarean section may occasionally compound the morbidity associated with obstructed labour. We therefore designed a longitudinal study in which one hundred and eight women with obstructed labour at term with live fetus were assigned randomly to either push or pull method on admission into the labour ward at Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife between 1 June 1998 and May 31 2000.

Our results showed that patients in the push group had statistically significant higher rates of maternal morbidity (longer operation time, more blood loss, extension of uterine incision, endometritis longer hospital stay and higher hospital bills) than the pull method ($P < 0.05$). Also the fetal morbidity was worse in the push group. We therefore concluded that the 'pull' method of delivery of impacted fetal head at caesarean section for obstruction is safer and faster than the 'push' method. (Fasubaa *et al* 2002).

Mr. Vice Chancellor Sir, having identified a safer mode of delivery of impacted head at caesarean section, we proceeded to search for ways of improving the acceptability of caesarean section in the southwestern Nigeria. To this end, we investigated the impact of short hospital stay on women who had caesarean operation with the aim of increasing the acceptance of this surgery (Fasubaa *et al* 2000). This study involved 100 consecutive patients who had uncomplicated caesarean section at Wesley Guild Hospital Ilesa. They were randomized into two groups of short (three days) and prolonged (seven to eight) hospital stay, respectively, matched for booking status, age, parity and types of caesarean section. The study showed clearly the benefits of better erect posture, lower incidence of depressive mood, lower neonatal sepsis rate, and reduced hospital cost following early discharge. The shorter hospital stay group expressed satisfaction about early discharge as

it did not allow many people to know that they had surgery. They also had early interaction with their family members. It was stressed that short hospital stay among women undergoing caesarean section could make the operation more acceptable and therefore reduce the aversion and fears associated with the surgery

Embracing the concept of early hospital discharge after uncomplicated caesarean section may alleviate the fears, psychological upset, anxieties, misconception about the surgery, reduce hospital costs, accelerate convalescence and encourage early integration with the family. Today, Mr Vice Chancellor Sir, these advantages had made the operation more acceptable and had made more women to deliver in approved health institutions.

Mr. Vice Chancellor Sir, to further increase the acceptance of caesarean section, we introduced the concept of early oral feeding after the surgery. (Orji *et al* 2008). In a randomised controlled trial we compared the effect of time of initiation of oral feeding on acceptability, benefits and gastrointestinal functions in 200 women who had undergone uncomplicated caesarean section in Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. Figure 11 showed a patient on early oral feeding.



Figure 11: A patient on early oral feeding after a caesarean operation

Our study demonstrated that early initiation of oral feeding after uncomplicated caesarean section is safe and well tolerated by patients. It is associated with shorter hospital stay, early resumption

of normal diet, early mobilization and reduction in cost of hospital bill with no increase in incidence of post-operative paralytic ileus.

To further enhance the success of early oral feeding after caesarean section, we evaluated the influence of misoprostol on intestinal motility after surgery and the added advantage that it might confer on recovery from surgery and length of hospital stay. To determine this, we conducted a prospective randomized double-blind study of 218 parturients undergoing caesarean delivery. Participants were randomised to receive 600 µg of rectal misoprostol or 20 intravenous units of oxytocin for 4 hours after surgery (Adanikin, *et al* 2010). The results showed that misoprostol group had a significantly shorter mean postoperative interval to passage of flatus and commencement of regular diet.

Mr. Vice Chancellor Sir, this our study titled **The effect of post-cesarean rectal misoprostol on intestinal motility (Adanikin, *et al* 2010)**, did not only contribute immensely to the improvement of maternal health; it was published in the *International Journal of Gynecology and Obstetrics*, the *Official Publication of the International Federation of Gynecology and Obstetrics (FIGO)* and it won the John J. Sciaarra International Prize Paper Award of the Journal. *This award attracted a cash prize in Euros and free subscription to Science Direct, Elsevier's web database of journals, reference works, and book series (www.sciencedirect.com).* The free subscription was in place through the remainder of 2013 and for the entire year 2014. I have received several international correspondences on this article. The certificate of the award is shown in Figure 12.



Figure 12: The Certificate of Prize Award

More importantly, **Mr. Vice Chancellor Sir**, every academic member of this award winning research team is from Obafemi Awolowo University. This tells the quality of manpower we have in this University, and thus indicates that the greatness of Great Ife shall never wane nor shall its sun set. OAU shall remain a citadel of intellectual excellence, an avatar of first class erudition, and an oasis of knowledge and hope.

We conducted several other interventions on caesarean sections in effort to reduce the associated morbidity and mortality and increase the acceptability of surgery amongst couples. Such interventions included exteriorisation versus non-exteriorisation of the uterus at caesarean section(Orji *et al* 2010); placement of an indwelling foley urethral catheter at caesarean section(Onile *et al* 2008); the use of prophylactic antibiotics for caesarean section (Alekwe *et al* 2009, Ijarotimi *et al* 2013); closure and non closure of peritoneum at caesarean section (Malomo *et al* 2006). All these interventions

were associated with reduced morbidity after surgery and better outcome.

Mr. Vice Chancellor Sir, having identified ways of making caesarean section safer and improving its acceptability, we envisaged that the demand for caesarean section and obstetrics emergencies would increase. We therefore assessed the preparedness of Obstetric Units at tertiary and primary levels to respond to emergency obstetric condition using a time motion study (Orji *et al* 2006, Orji *et al* 2007; Ijadunola *et al* 2007). In OAUTHC, the efficiency of the workload, the facilities, and the providers were assessed using a client flow chart. Our finding revealed that there were delays in 47.9% of the cases. The mean decision-caesarean delivery interval of 4.48 hours in this study is intolerably high compared with the standard decision-delivery interval of 30 minutes. Theatre related factors, inconsistent power supply to the hospital which affected availability of blood, sterile surgical materials, in some cases late consent for surgery due to aversion for the surgery and in few cases poor individual attitude to work. This is similar to findings of earlier authors in this centre. (Onwudiegwu *et al* 1999). We have since instituted periodic review of maternal morbidity and mortality to identify bottle necks and overhaul services to meet the intended objective of reducing maternal mortality and morbidity (Orji *et al* 2007).

At the primary level, we conducted a baseline survey on health facilities and need assessment in Ife South Local Government Area using instruments adapted from the United Nations guidelines to assess their readiness to handle obstetric emergencies and life saving skills (Ijadunola *et al* 2007). About twenty-one of 26 health facilities surveyed were public facilities, and five were privately owned. None of the facilities met the criteria for a basic Essential Obstetric Care (EOC) facility, while only one private facility met the criteria for a comprehensive EOC facility. Three facilities employed a nurse and/or a midwife, while unskilled health attendants manned 46% of the facilities. No health worker in the LGA had ever been trained in lifesaving skills. There was a widespread lack of basic EOC equipment and supplies.

The study concluded that there were major deficiencies in the supply side of obstetric care services in the LGA, and EOC was almost non-existent. The result has implications for interventions for the reduction of maternal mortality in the LGA. To address these limitations, we organized capacity building on life Saving Skills for doctors, nurses, and other health workers over a two-month period with grants from Bill & Melinda Gates Partnership. Memory of the workshop is shown in Figure 13.

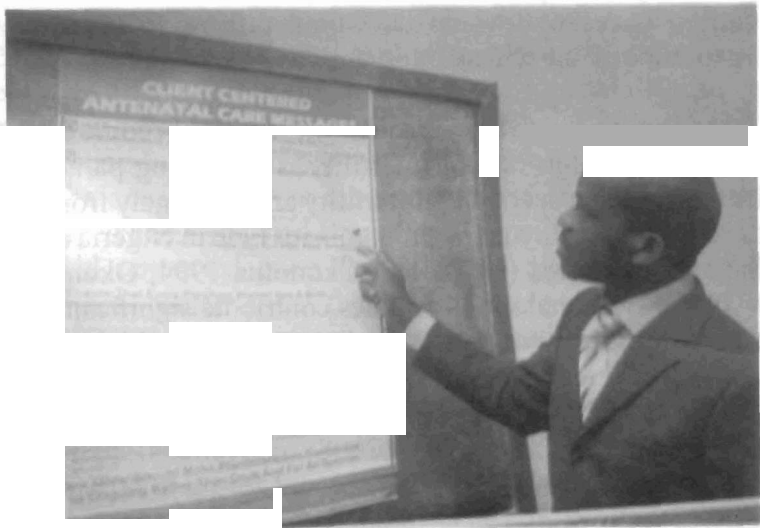


Figure 13: The Inaugural Lecturer at a Capacity building workshop on life saving skills

WHEN THE WOMB REFUSES TO OPEN

Mr. Vice Chancellor Sir, the discussion so far has been on “when the womb opens”, I would like to reflect on another set of our research captioned “when the womb refuses to open”. By this I mean that couple could not achieve conception after one year of regular, unprotected sexual intercourse of at least thrice per week which we define as infertility. So the caption “when the womb

refuses to open” does not necessarily imply that the woman is responsible; it could be the man or both. No matter who is responsible, “when the womb refuses to open”, emotions always run high and a home once still as the biblical still waters may become the abode of Armageddon, reminiscent of the First and Second World Wars combined. But then, **Mr. Vice Chancellor Sir**, I have good news: all hope is not lost! Through our research and community services, we have helped couples who were at the verge of falling apart because of infertility to fall in love again and to bounce back with bouncing healthy babies. Let me first of all lay bare the causes and consequences of “when the womb refuses to open” before turning to some of our critical interventions.

That Nigeria with a high total fertility rate has also become one of the countries with a high rate of infertility is a startling paradox. Our studies confirm that secondary infertility arising largely from abused or mismanaged fertility is the predominant type in Nigeria and other sub-Saharan countries (Orji 2008, Okonofua 1994, Okonofua and Snow 1995). Both males and females contribute significantly to the secondary infertility in almost equal proportions in Nigeria. While sexually transmitted diseases, which damage reproductive tracts in both male and female, account for about 50% of all cases (Esimai *et al* 2002; Orji *et al* 2001; Orji 2008), infections arising from complications of unsafe abortions account for up to 40% of female infertility (Ezechi *et al* 1999, Okonofua 1994), just as postpartum infections also play a significant role. These infections cause adhesions and distortion of the internal genital organs, and while infertility persists, uterine fibroids may develop or grow bigger.

Due to high premium placed on childbearing in our environment, infertile women often go to any length to conceive. Infertility is a couple problem but the women are often blamed as the cause even when it is obvious that the husband may be the cause (Orji *et al* 2002). Therefore most of the time, women bear the consequences and costs of investigations and treatment for infertility. Unfortunately, the investigation and management of infertility still

leaves a lot to be desired. It is often slow, time-consuming and costly. Investigations are performed in a piecemeal fashion rather than as part of an overall strategy. The infertile couples are seldom seen together. The temptation to try many empirical, possibly useless medical treatments is considerable; and patients often end up spending large sums of money at the hands of quacks, herbalists, native doctors, and "spiritual healers". The impact of infertility on couples is therefore grave. (Orji et al 2002)

In view of this, we conducted a prospective study in Ile-Ife, Nigeria to assess the relative impact of infertility on the marital relationship, family and social life of 236 women with secondary infertility (Orji *et al* 2002). The results showed that all age groups and educational levels were affected. Infertile women suffer societal discrimination, abuse by in-laws, fellow women, accusation of being a witch or having aborted unwanted pregnancies before marriage even when the women concerned were innocent. About 38.9% of the patients had divorced and remarried because of infertility. Of these women, 62.2% had remarried once, 23.9% twice and 10% three times. Through these remarriages, they had multiple, unprotected sexual intercourse with several partners that exposed them to the risks of sexually transmitted infections including HIV.

Besides these social consequences, there are also psychological repercussions of infertility, especially for women. Our study also determined the prevalence of psychiatric morbidity and factors associated with poor mental health in women suffering from infertility. We administered the General Health Questionnaire (GHQ-30), Beck Depression Inventory (BDI) and the Anxiety Subscale of the Hospital Anxiety and Depression Scale (HADS-A) to 112 women with infertility at the time of their first presentation to an infertility clinic in a tertiary referral centre (Ukpong and Orji 2006). The comparison group were 96 women presenting at the family planning clinic of the same institution. The results showed that the prevalence of psychiatric morbidity was 46.4% (GHQ cases) in the infertile women, 37.5% and 42.9% were cases of

anxiety and depression respectively. Women suffering from infertility scored significantly higher on all outcome measures of psychopathology. The results of the multiple regression analysis showed that the sociodemographic variables of the women with infertility contributed to the prediction of psychiatric morbidity (GHQ- 30 score), because of the effects of age, not having at least one child and poor support from spouse ($R^2 = 0.26$, Adjusted $R^2 = 0.19$, $F=3.57$, $p \leq 0.01$). We concluded that infertility is associated with high levels of psychiatric morbidity. Our findings reinforce the need for gynaecologist and healthcare professionals to look for psychosocial distress in women undergoing fertility treatment.

Mr. Vice Chancellor Sir, although infertility treatment and management is daunting, we have intervened in many infertility cases; and in so doing, we have put smiles and laughter in many homes. Some of our interventions include sexual counselling, ovulation induction, tuboplasty in those with mild tubal factors, and surgical removal of gigantic multiple fibroids as shown in Figures 14 and 15



Figures 14: The Inaugural Lecturer and his team exposing uterus riddled with multiple fibroids



Figure 15: The Inaugural Lecturer and his team removing the giant multiple fibroids

.And many of our clients have conceived and delivered their desired number of children. In fact, some of them even requested for permanent sterilizations when the number of their children became numerous. When I see such couples and their children, my joy knows no bound. Moreover, the fragmentation of motherhood, through advanced reproductive technology, into genetic, gestational and social mother has helped many couples. Hence, infertility will soon be consigned to the dust-bin of history.

Mr. Vice Chancellor Sir, I have furthered my quest to reduce infertility and maternal mortality and morbidity through the formation of Osun State branch of Nigerian Prevention of Maternal Mortality Network (Osun PMMN). It is an NGO committed to reducing infertility and maternal mortality through education, counselling and mobilization of communities and stake holders to be committed to efforts and strategies to improve maternal health.

With aid of grants received from the national body we were able to comb several rural communities in Osun State such as Garage

Olode, Iyanfoworogi, Ifetedo, Yekemi, Osu among others conducting capacity building among all cadres of health workers rendering delivery of maternal health services thus again fulfilling our mandate from GOWN To TOWN. In partnership with Ife South LG Chairman we were able to refurbish a health centre at Ifetedo and successfully collaborated with them in the area of capacity building, teaching and educating women leaders, opinion leaders and government officials on their various roles to reduce maternal mortality and infertility.

PLANNING FOR THE OPENING OF THE WOMB

Mr. Vice Chancellor Sir, from the facts presented so far, it is evident that to reduce infertility and maternal mortality and morbidity in Nigeria we need to plan and protect fertility and the family. I have used the words “fertility” and “family” to capture both sexually active but unmarried individuals and couples. For the former it is important they protect their fertility so that they will not end up searching for it with **TEARS** as the biblical Esau sought for his birthright. Data from several parts of Nigeria showed that the number of single adolescents engaging in unprotected sexual activities is on the increase while the average age at sexual debut is on the decline among this category of people. For instance, we investigated the sexual behaviour and contraceptive use among teenage selected secondary school students in southwestern Nigeria (Orji and Esimai 2003, Ezechi *et al* 2000).

Our findings showed that about 50% of the respondents were sexually active while the predominant age at first coitus was 15.19 years. Circumstances leading to sexual debut included mutual agreement, coercion and curiosity. Predominant proportion of sexually active teenagers (86.7%) did not use contraception at the time of first coitus and most of them had more than one sexual partner. We also found a similar pattern of high sexual activity among undergraduates in tertiary institutions in Nigeria (Orji *et al* 2005a, 2005b). The consequences of this unsafe sexual behaviour are that some of them have lost their lives and their fertility while

others are at a great risk of acquiring STDs including HIV infection, and unwanted pregnancy. It is therefore important that in order to protect these young people we suggest that sexuality and family life education should be taught from the family level. The importance of abstinence as a tool for preventing unwanted pregnancy and its repercussions should be stressed. It is hereby emphasized that abstinence is possible even in this generation. Where this is impossible, contraceptive use especially the dual protection afforded by condom should be emphasized (Orji and Esimai 2003, Ezechi *et al* 2000, Orji *et al* 2003). This is important so that in the future when these adolescents want to open their wombs and begin their families there would be no regrets like the biblical Esau.

For the married women, the benefits of family planning are enormous. Family planning is the first pillar in safe motherhood as shown in Figure 16.

The Enhanced Pillars of Safe Motherhood in Nigeria

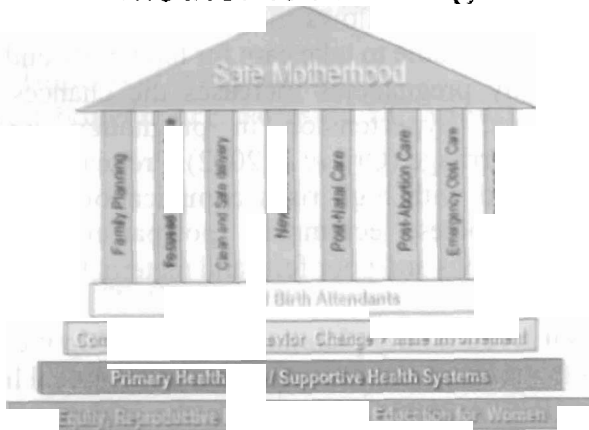


Figure 16: The eight pillars of safe motherhood (Source USAID, 2006)

As the first pillar of safe motherhood and essential component of primary health care, family planning plays a major role in reducing

maternal and newborn morbidity and mortality. The goal of family planning is to enable couples and individuals to freely choose how many children to have and when to have them. Pregnancy should be by choice and not by chance to avoid making God's blessings look like a curse. This can be achieved by making full range of effective contraceptive methods available and by giving men and women sufficient information to make informed choices. The benefits of contraceptives usage and family planning exist at multiple scales (Singh *et al* 2004). At family level, they prevent too many, too early, too closely spaced, and too late pregnancies. It is important to prevent too early pregnancies because unplanned pregnancies at very young age is associated with high chances of unsafe abortions because these young girls are often in schools, immature and unmarried so the chances of keeping the pregnancies are low and the options of termination very high.(Okonfua and Snow 1995, Megafu and Ozumba 1991)

Even if they decide to keep the pregnancy, pregnancy complications such as anaemia, hypertension, eclampsia, obstructed labour, risks for fistula are high in this age group, as our studies (Orji *et al* 2000) attest. Similarly, it is important to prevent too closely spaced pregnancies because this allows the mother to recover fully from previous births and is able to take care for the family and her health. Having too many pregnancies increases the chances of uterine rupture, anaemia, hypertension in pregnancy, and primary postpartum haemorrhage (Orji *et al* 2002). Pregnancies at late ages are also associated with high risks complications which include hypertension, diabetes, eclampsia, postpartum haemorrhage, operative interventions and poor fetal and maternal outcome (Orji *et al* 2004).

At the societal level, family planning and contraceptive usage have significant effects on our social, economic and political life (USAID 2004, 2006, UNFPA 2005). They enable the society to regulate its population. One of the consequences of unregulated population is pressure on every aspect of everyday lives of the citizenry. Vignettes of population pressure found in big cities in Nigeria are shown in Figures 17 and 18.



Figure 17: Impacts of over population

Source: en.wikipedia.org. Accessed 18th August 2014



Figure 18: Too many liabilities

Source: RAPIDS 2012.

Moreover, family planning and contraceptive usage can prevent 187 million unintended pregnancies among current users, which translate into the prevention of 215,000 pregnancy-related deaths and 2.7 million infant deaths. And in so doing, they help the emergence of a healthier population. Data presented in Table 4 showed the benefits of family planning.

Obafemi Awolowo University
ILE-IFE, NIGERIA.

Table 4: The Benefits of Family Planning for Current Users and Those with Unmet Need

Providing family planning to current users prevents...	Satisfying unmet family planning need would prevent...
187m unintended pregnancies	52m unintended pregnancies
60 m unplanned births	23m unplanned births
105m induced abortions	22m induced abortions
22m spontaneous abortions	7 m spontaneous abortions
2.7m infant deaths	1.4m infant deaths
215,000pregnancy-related deaths—79,000 from unsafe abortions and 136,000 not related to induced abortion	142,000pregnancy-related deaths—53,000 from unsafe abortions and 89,000 not related to induced abortion
685,000 children from losing their mothers as a result of pregnancy-related deaths	505,000 children from losing their mothers as a result of pregnancy-related deaths
The loss of 60 million disability-adjusted life years (DALYs)—16 million among women and 44 million among infants and children	The loss of 27 million disability-adjusted life years (DALYs) —9 million among women and 18 million among infants and children

Source: Singh *et al* (2004)

Mr. Vice Chancellor Sir, despite this overwhelming statistics and the immense advantages shown in Table 4, investment in family planning is abysmally low in Nigeria. Only 10% of our married women of childbearing age in Nigeria use modern contraceptives and the unmet need for family planning is about 20%. In contrast, about 77% of married women in some of other countries, especially in developed nations, use modern contraceptives and the unmet needs for family planning in those nations are almost insignificant (Selected DHS 2008).

Given the importance of family planning to among the married women, we began a set of research works aimed at facilitating the

acceptance of family planning and contraceptives usage. To this end, we determined the prevalence of unmet need for contraception among breastfeeding women and established the correlates of contraceptive practices of the respondents (Adeyemi *et al* 2005, Orji *et al* 2005, Ijadunola *et al* 2006). We designed a prospective study of 256 breastfeeding women who had been exposed to a well-structured family planning programme during pregnancy. They were followed-up for a period of 9-11 months post-delivery to determine their contraceptive practices. The study assumed that all the women had the need for contraception for at least the first year post-partum either for spacing or limiting family size.

Mr. Vice-Chancellor Sir, our findings revealed that contraceptive practice among the nursing mothers in this population was lower than expected, despite their exposure to family planning education. More than half (59.4%) of respondents had unmet need for family planning. The fact that 80.5% of the sample perceived contraception as being beneficial made it difficult to ascribe the knowledge – practice gap to a poor understanding of the concept of contraception. Some of the reasons given by respondents for non-use of contraception were misconceptions, and these have been widely documented in Nigeria, but the fact that 30% of the non-users gave no specific reasons for their inaction was a matter of concern. While about three-quarters of the respondents had resumed sexual intercourse 6 weeks post-partum, and so were already at risk of another pregnancy, only about a third of respondents could correctly report the at –risk period for pregnancy in the post-partum period. One could infer from this that one of the reasons for the poor contraceptive practice of this sample was poor perception of risks of pregnancy. Some of the women actually became pregnant during this breastfeeding period and aborted the pregnancies because their babies were too young.

Moreover, we investigated the role of men in family planning decision-making in both rural and urban areas of Nigeria. This is because earlier research in Nigeria showed that the decision to have another child is more often than not made by the man rather than

the woman (Safe Motherhood 1995). It therefore became pertinent for us to assess male's involvement in family planning decision making and usage. In our study, a total number of 370 married men (244 rural and 126 urban) were interviewed using a pre-tested, semi-structured interviewer based questionnaire. The study was conducted in the Iwaro community in Atakumosa West Local Government area (rural men) and the Oranfe Community in Ife East Local government area (urban men), both in Osun State, southwestern Nigeria (Orji *et al* 2007). The results showed a high level of awareness of family planning among both study groups (98.3% rural and 98.4% urban). Most men in both groups believe that a decision about family planning should be made jointly by the spouses instead of being the prerogative of either. This contrasts with the generally held belief that men are opposed to family planning. The condom was the most commonly known and used method with a preponderance among urban (81.1%) over rural men (69.4%). The study concluded that decision about contraception should be done jointly by men and women in southwestern Nigeria (Orji *et al* 2006). Similarly, a study among married market men in Ilesha (Orji & Onwudiegwu 2003) showed that all the men were aware of family planning and about 60.9% was using one form of contraception or other with their spouses. Involving men by family planning providers is therefore a winning strategy with benefits to both men and women (Orji *et al* 2006).

One of the reasons for aversion of women for family planning is the fear that prolonged birth spacing may affect fetomaternal outcome in future when the woman decides to get pregnant (Orji *et al* 2000, Orji *et al* 2004). We compared multiparae with prolonged birth spacing (> or =6 years) and controls with shorter normal birth spacing (2 - 5 years) matched for age, parity and socio-economic status. There was no significant difference observed with respect to spontaneous onset of labour, induction or augmentation of labour, duration of labour, spontaneous vaginal delivery rates, Caesarean section rates, instrumental vaginal deliveries, analgesic requirement, postpartum haemorrhage, and Apgar scores in both groups. There were no perinatal or maternal deaths. We concluded

that there was no significant difference in maternal and perinatal outcome in pregnancy between women with prolonged birth spacing and those with normal shorter birth spacing (Orji *et al* 2004.)

Mr. Vice Chancellor Sir, based on the above research findings, we decided to intervene both at community and the health facility levels. We mobilized and sensitized communities, through awareness programmes, and trained health workers on wider contraceptive methods. One of the often cited reasons for poor contraceptive usage is the lack of community mobilization and limited methods available in our family planning clinics, especially contraceptive implants such as Jadelle and Implanon. We therefore, conducted an educational and clinical training among service providers on insertion and removal of implants. We also organized update courses on other existing family planning methods. The trainings and community mobilization were facilitated by a grant we received from Bill & Melinda Gates Foundation.

One of our sensitization rallies was held at Ijebu-Ijesa, the headquarters of Oriade Local Government Area, Osun State. It was preceded by courtesy visits to traditional ruler and chiefs in this community to obtain permission and cooperation during the study. The Local Government Chairman and his cabinet members were mobilized for the activity. A six-month radio phone-in programme on reproductive health including family planning issues was done. Training of family planning service providers on implants insertion and removal and refresher courses for other existing methods were carried out. Participants for community mobilization were drawn from market men and women, road transport workers, artisans, farmers etc. The Local Government Chairman and his cabinet members physically joined the community mobilization and distribution of information, education and communication (IEC) materials and condoms.

Involvement of government officials in such a programme is very crucial. It secures legitimacy and provides enabling policy

environment, which are essential for the financing and provisioning of accessible, high-quality health programmes and services, including safe motherhood and family planning services. Memories of the training are shown in figures 19-22.



Figure 19 shows the :Inaugural lecturer and his team members Prof Ojofeitimi, Prof Ogunjuyigbe at the sensitization rally at Ijebu-Ijesa



Figure 20 shows the Inaugural lecturer, the Local Government Chairman on Green Cap and Prof Ojofeitimi, Prof Ogunjuyigbe at the sensitization rally at Ijebu-Ijesa



Figure 21 shows the Local Government Chairman and his cabinet members distributing IEC materials on family planning at the sensitization rally at Ijebu-Ijesa

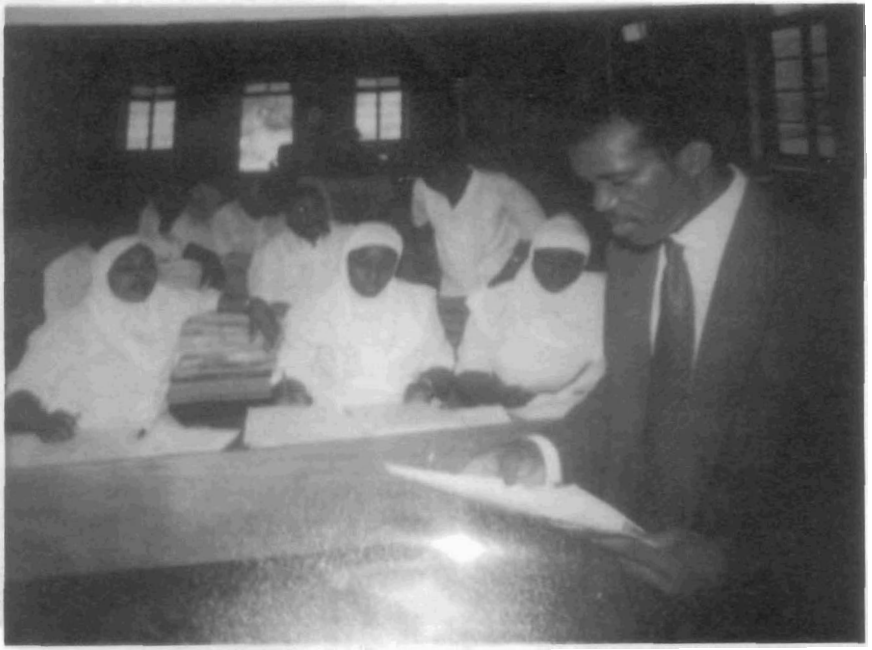


Figure 22 shows the Inaugural lecturer sensitizing some muslim faithfuls on reproductive health issues

Our sensitization activities on family planning at Ijebu Ijesa made so much international impact that one of the editors of New York Times came with her team to inspect our project sites to obtain first hand information of our family planning activities and for documentation. Memory of their visit is shown in fig. 23.



Figure 23 shows: Inaugural lecturer with New York Times editor and her team inspecting our family planning site at Ijebu –Ijesa. Standing with us is Prof Ogunjuyigbe, Matron Mosobolaje

After the campaign and training the results showed that there is general yearly increment in new acceptors of each method after the training from April 2008 till December 2011, as shown in Figures 19 and 20.

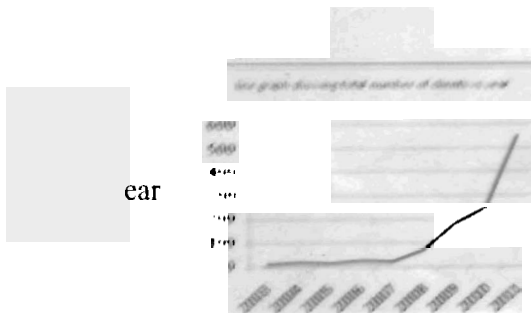


Figure 19: Line graph showing total number of clients versus year.

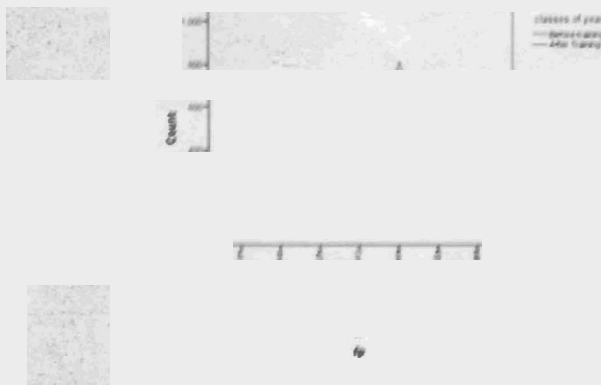


Figure 20: Contraceptive Acceptance Before and After Training in Ijebu-Ijesa

Mr. Vice-Chancellor Sir, to further disseminate knowledge and skills on contraceptive implants, I started mentoring medical students, nursing and midwifery students, nurses / midwives, residents and consultants on insertion and removal of implants. I also began to give them update on other contraceptive methods. Memories of some of the training workshops are shown in Figures 21 and 22.

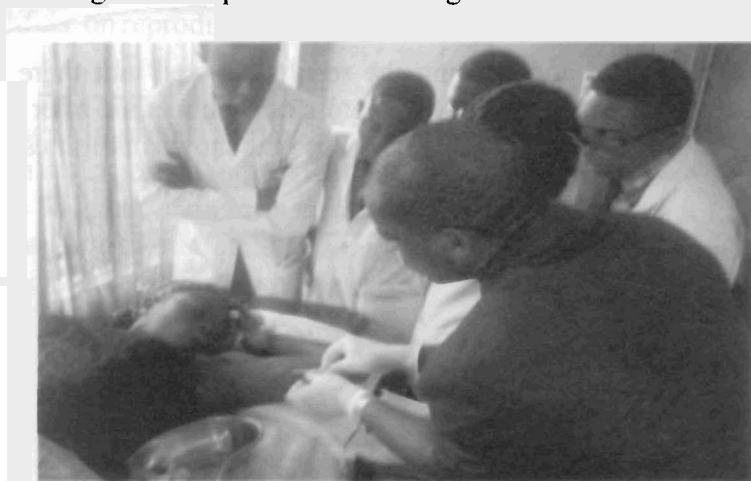


Figure 21a: Training of doctors, nurses, medical students and nursing students on insertion and removal of implants



Figure 21 b. Inaugural Lecturer inserting implanon on a client



Figure 22: A cross-section of some participants at one of the training sessions

Mr. Vice Chancellor Sir, my impact in family planning continued at the national level, where I was nominated as a pioneer member of both National Family Planning Action Group and Association for Advancement of Family Planning in Nigeria. These advocacy groups comprise Country Representatives and Directors of international donor organizations and major NGOs in Nigeria working on reproductive health. My activities in these groups concentrated on lobbying the Presidency, National Assembly members, Inter-religious Groups, Representatives of the Sultan of Sokoto and CAN President, among others, to influence the government to radically plan and budget for family planning commodities.

Our Safe motherhood activities focused on assisting the government in the articulation and dissemination of several policy documents on national population and reproductive health issues, with the aim to specifically promoting family planning as a means to reducing maternal mortality and raising the profile of Nigeria's safe motherhood efforts and commitment. Many of our strategies and messages revolve around evidence and data collected through modelling, such as the RAPID model. We successfully organized the first national family planning conference in Nigeria in 2010 and the second in 2012. Through the conferences and similar platforms, we have drawn attention to the magnitude of the problem facing family planning needs in Nigeria.

These efforts began to pay off in May 2011 when the Federal Government started the free distribution of family planning commodities through state and local governments to all the health facilities across the country. This initiative along with consistent high level government pronouncements on maternal health have generated inexorable momentum and created opportunity, though many long term observers are reserving judgment until full implementation and follow through have begun.

Mr. Vice Chancellor Sir, due to the intense lobby from our groups, within and outside the country, the president, Dr. Goodluck Ebele Jonathan, did not only lead the Nigerian

delegation to the July 2012 London Summit on Family Planning, a high profile international conference with donor and partners; he also announced government's commitment to increase spending on reproductive health commodities from 3 million dollars annually to 11.35 million dollars annually for the next 4 years; that is, almost 300 per cent increase.

Moreover, just one week after the London Summit on Family Planning, the National Council on Health approved a policy of task shifting that would allow Community Health Extension Workers (CHEWs) to provide injectable contraceptives outside of health facilities. This policy, before our groups emerged, had faced formidable oppositions from many quarters. Due to these giant strides, which our groups have contributed to in no small measure, the President, Dr. Goodluck Ebele Jonathan, was selected as a co-chair of the UN Commission on Life Saving Commodities for women. Therefore, my foray into maternal health challenges, has not only given joy to individuals, families and communities, it has also brought honour and dignity to our country, Nigeria at the international level. We should not forget that **WHILE CHILDHOOD IMMUNIZATION SAVE CHILDREN, FAMILY PLANNING SAVE WOMEN**

RECOMMENDATIONS FOR OPENING THE WOMB OF LIFE WITHOUT SORROWS

Mr. Vice Chancellor Sir, as a stake holder who has gone through the thick and thin of maternal health care delivery in the Ivory Tower and burrowed through the trenches of bureaucratic setting regulating maternal health issues in the real world, I am persuaded that the womb life can be opened without sorrows. To this end, I make the following recommendations:

1. Primary prevention by the use of family planning and contraceptive usage should be pursued vigorously to reduce the

incidence of unwanted pregnancies and recourse to unsafe abortions.

2. When pregnant, individuals and families should learn to recognize danger signs and take timely appropriate actions when obstetric complications occur. A birth-preparedness concept of an action plan to mobilize resources for emergency transport, payment of hospital bills, donation of blood and other means to reduce maternal deaths should be put in place before the need arises.
3. Health care workers should regularly update their skills and performance to provide high quality maternal care and family planning. Their ability to recognize, treat or refer complications and emergencies should be improved. It is therefore mandatory for any country aspiring for quality maternity service to ensure that skilled birth attendant supervise all labour and deliveries.
4. Training of Obstetrician and Gynaecologist specialists to provide high quality care and research into solutions for maternal health issues should be pursued.
5. Government Policy of free maternity care to reduce maternal and newborn morbidity and mortality should be implemented. A good example of this is the 'Abiye Programme of Ondo State'
6. Primary health care (PHC) strategy for improving women's access to maternal health should be strengthened. But it should be recognized that PHC alone cannot reduce maternal mortality. This is because some of the obstetric complications that lead to mortality such as haemorrhage, eclampsia, obstructed labour and severe puerperal infection cannot be treated at the level of primary care. PHC can provide primary prevention services including family planning, antenatal services, normal delivery care and basic reproductive health services, but women experiencing complications who require secondary and tertiary preventions must be referred to a functional secondary and tertiary care facilities.

CONCLUSION

Mr. Vice Chancellor Sir, let me conclude this Inaugural Lecture by reminding the audience that the process of child birth and the entire domain of reproductive health vis-à-vis research, service, and teaching are all a risky adventure. But the risk is inevitable: life must triumph over death. The grim statistics of our maternal landscape must be remade. Although the grievous grip of death on reproductive health seems too tight, especially in Nigeria and other developing nations, my research, community service and teaching presented in this lecture have shown that the shackles of maternal and perinatal deaths can be broken. Yes, couples can plan, conceive, and deliver with mothers and babies all alive. To this end, the successes recorded in our research, community service and teaching should be replicated at multiple levels. In other words, capacity building of grassroots' health workers in the use of partograph must be carried out nationwide. It will ensure that complication of labour is detected early and appropriate interventions promptly proffered. This will reduce maternal and perinatal deaths resulting from labour complications as our research has shown.

Moreover, capacity building in family planning methods should be implemented amongst all categories of health workers to ensure availability of quality family planning services (Orji *et al* 2003). Also the use of sexual abstinence among the unmarried adolescents and youth should be promoted as a family planning method among this population group. Effective family planning and consistent and correct usage of contraceptives, as our research findings have demonstrated, will prevent sexually transmitted infections and unwanted pregnancies. And in so doing, they will reduce unsafe abortions which have claimed many lives, both old and young. They will also contribute to the emergence of a healthier population.

Furthermore, innovations in caesarean section should be communicated to all stakeholders. Our new ideas, which have enhanced the acceptability of baby delivery through surgery, should be made available to other parts of the country with similar socio-cultural milieus as our study areas. The process of communicating the innovations in partographs, caesarean operation, infertility management, family planning and contraceptive usage can be facilitated through community mobilization and sensitization. Such mobilization and sensitization must be all- inclusive. Every stratum of the society must be carried along. Efforts of civil society can be harnessed and deployed in the pursuit of better maternal and perinatal health outcomes through formation of NGOs. This will ultimately lead to the institutionalization of best practices in the reproductive health.

The mobilization and sensitization should also carry the traditional rulers and policy makers along. Our research findings have shown that the inclusion of these categories of stakeholders will enhance not only the diffusion of innovations but also increase the legitimization of the health projects. Again, our research findings have pointed to the importance of infrastructure and enabling environment in the tackling of maternal health problems. It is, therefore, imperative for the government to get all the health facilities in Nigeria to be functional 24 hours a day, 7 days in a week. Also issues leading to industrial actions in the health sector should be resolved immediately; strike in the sector causes delay in receiving care amongst pregnant women as documented in our study.

Similarly, today's terror attacks by the extremist group - Boko Haram – that is forcing many health and development implementers to shut down or scale back operations in the north should be fought to a halt immediately. Activities of the terrorists have tendency to reverse all the achievements we have made in the health sector back to forty years ago (Cooke & Tahir 2013).

Finally, I believe there is still hope for improvement of maternal health indices in Nigeria. Hope is a great thing to have. But we should always remember the wisdom of the saying that hope is good for breakfast, but bad for supper (Fathalla 2012). Hope is good when you take it early in the morning and go to work on it. Hope is bad when you take it at night and go to sleep on it. I have taken hope and have gone to work on it. There is no looking back. **Mr. Vice Chancellor Sir**, so great has been my commitment to patient care from the time of my residency till now that Professor Roger Makanjuola – a two tenured Chief Medical Director and a former Vice Chancellor of this great University acknowledged me in his book: **Water must flow Uphill: An Adventure in University Administration.** (Makanjuola 2012). In pages 34 and 35 of the book, he painted a true portrait of my services in the following words: **the resident concerned has since demonstrated his commitment to patient care, and is now one of our most valuable consultants.** I am therefore fully persuaded that if the zest and zeal which have informed my teaching, research and community services are deployed in the implementation of the recommendations of today's lecture across the nation, Nigeria will certainly change from being one of the ten most dangerous countries in the world for a woman to give birth to one of the ten safest places for child delivery.

Mr. Vice Chancellor Sir, permit me to appreciate my late father Pa Samuel Orji and my mother Mrs Margaret Orji who is present in this gathering for rendering the process of parenting. I appreciate my uncles and their wives Honourable and Mrs Robinson Orji, Mr and Mrs Christopher Orji, and my siblings for their immense contributions in my medical training. I am very happy they are witnesses of this great occasion. I am also grateful to my late father-in-law Pa Joseph Famomi and my mother-in-law Mrs. Elizabeth Modupe Famomi who is present here. I also appreciate all the consultant staff, non academic staff, resident doctors, and nurses in the Department of Obstetrics, Gynaecology and Perinatology for giving me the ladder to rise to my present status. In addition, I thank Professor Rogers Makanjuola, the former Chief Medical

Director, OAUTHC, Ile-Ife and also former Vice Chancellor , OAU Ile-Ife who noticed my God- given potential and gave me an opportunity to develop it. I am also grateful to the leadership and members of New Covenant Church, Ile –Ife Conference: their fervent prayers and support are felt daily in my life.

Mr. Vice Chancellor Sir, Ladies and Gentlemen, the last and not the least, I would like to appreciate my immediate family members: The first is my lovely wife, Mrs Victoria Olutobi ORJI who stood by me all these years. Her patience, endurance and encouragement tremendously assisted to my elevation to the rank of Professor. She had maintained the home front while I combed the communities with one health intervention or the other. I sincerely appreciate her understanding and assistance in my frequent trips for our advocacy efforts most of which were at a very short notice. She has been a pillar of support as I have toiled with my academic work. I also want to recognize and appreciate my children: Ernestina, Faith and Flourish for their understanding for my repeated and frequent absence from the house in my efforts to reduce morbidity and mortality associated with opening the womb of life.

Now unto the king eternal, immortal, invisible, the only wise GOD be honour and glory forever and ever. Mr Vice Chancellor Sir, distinguished ladies and gentlemen. I thank you all for your attendance and attention.

REFERENCES

- Ackerknecht, Erwin H. (1982) *A Short History of Medicine*, Baltimore: The Johns Hopkins University Press, Maryland Baltimore, USA
- Adanikin AI, Orji EO, Fasubaa OB, Onwudiegwu U, Ijarotimi OA, Olaniyan O.(2012) The effect of post-cesarean rectal misoprostol on intestinal motility. *International Journal of Gynaecology and Obstetrics*. 2012 Nov;119(2):159-62.
- Adeyemi AB, Ijadunola KT, **Orji EO**, Kuti O, Alabi MM(2005) The unmet need for contraception among Nigerian women in the first year post-partum. *European Journal of Contraception and Reproductive Health Care*10(4):229-234.
- Afolabi EO, Kuti O, Orji EO, Ogunniyi SO. (2010). Oral misoprostol versus intramuscular oxytocin in the active management of the third stage of labour. *Singapore Medical Journal*.;51(3):207
- Alekwe LO, Kuti O, **Orji EO**, Ogunniyi SO(2008). Comparison of ceftriaxone versus triple drug regime in prevention of caesarean section infectious morbidities. *The Journal of Maternal-Fetal & Neonatal Medicine*,21(9):638-642.
- Badejoko OO, Ijarotimi AO, Awowole IO, Loto OM, Badejoko BO, Olaiya DS, Fatusi AO, Kuti O, Orji EO, Ogunniyi SO.(2012) Adjunctive rectal misoprostol versus oxytocin infusion for prevention of postpartum hemorrhage in women at risk: a randomized controlled trial. *Journal of Obstetric and Gynaecological Research* Nov;38(11):1294-301.
- Boley, J.P(1991)., "The History of Cesarean Section," *Canadian Medical Association Journal*, Vol. 145, No. 4, pp. 319-322.

- Cooke JG, Tahir F(2013). Maternal Health in Nigeria: with leadership, progress is possible. A report of the CSIS Global Health Policy Centre. Pages 1-22.
- Donnison, Jean (1988) *Midwives and Medical Men: A History of the Struggle for the Control of Childbirth*, London: Historical Publications Ltd.
- Durodola A, Kuti O, **Orji EO**, Ogunniyi SO(2005). Rate of Increase in oxytocin dose on the outcome of labor induction. *International Journal Of Gynaecology and Obstetrics*,90 (2):107-111
- Esimai OA, **Orji EO**, Lasisi AR (2002): Male Contribution to infertility in Ile-Ife, Nigeria. *Nigerian Journal of Medicine*. Vol. 11, No. 2: 71-73.
- Ezechi OC, Fasubaa OB, Dare FO(1999). Abortion related deaths in southwestern Nigeria. *Nigerian Journal of Medicine* ,8(3):112-114
- Ezechi OC, Fasubaa OB, Dare FO(1999). Contraceptive promotion and utilization; solution to problem of illegally induced abortion in countries with restrictive abortion law. *Nigerian Quarterly Journal of Hospital Medicine* 9(2):167-187
- Ezechi OC, Fasubaa OB, Dare FO(2000). Socio-economic Barriers to Safe Motherhood among booked patients in rural Nigerian Hospital. *Journal of Obstetrics & Gynaecology*; 20(1):32-34
- Fathalla M (2012). On Safe Motherhood at 25 years, Looking Back, Moving Forward. *Hands On For Mother and Babies* pages 7-19.
- Fasubaa OB, Ogunniyi SO, Dare FO, Isawumi AI, Ezechi OC, **Orji EO** (2000). Uncomplicated Caesarean Section: Is prolonged Hospital Stay necessary. *East African Medical Journal*, Vol. 77 (No 8): 36-39.

- Fasubaa OB, Ezechi OC, **Orji EO**, Ogunniyi SO, Akindele ST, Loto OM and Okogbo FO (2002). Delivery of the impacted head of the fetus at caesarean section after prolonged labour: A randomized comparative study of two methods. *Journal of Obstetrics and Gynaecology* vol. 22(4): 376-379.
- Fatusi AA, Makinde NO , Adeyemi AB, **Orji EO**, Onwudiegwu U(2008). Evaluation of health workers training on the use of Partogram. *International Journal of Gynaecology and Obstetrics* 100(1):41-44
- Ijadunola KT, **Orji EO**, Ajibade FO (2005) .Contraceptive Awareness and Use among sexually active breastfeeding mothers in Ile-Ife, Nigeria. *East African Medical Journal*; 85(5):250-255.
- Ijadunola KT, Fatusi AT, **Orji EO**, Adeyemi AB, Owolabi OO, Ojofeitimi EO, Omideyi AA, Adewuyi AA(2007). Unavailability of essential obstetric care services in a local government area of south west Nigeria. *Journal of Health Population and Nutrition*.25(1):94-100.
- Ijarotimi AO, Badejoko OO, Ijarotimi O, Loto OM, Orji EO, Fasubaa OB (2013). Comparism of short versus long term antibiotic prophylaxis in Elective caesarean section at the Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife, Nigeria.*The Nigerian Postgraduate Medical Journal*, 20(4):325-330.
- Kuti O, Orji EO, Ogunlola IO. (2003) Kuti O, Orji EO, Ogunlola IO.(2003). Analysis of perinatal mortality in a Nigerian teaching hospital. *Journal of Obstetrics and Gynaecology*; 20(1): 512-514
- Loto OM, Adewuya AO, Ajenifuja OK, Orji EO, Owolabi AT, Ogunniyi SO.(2009).The effect of caesarean section on self-esteem amongst primiparous women in South-Western

Nigeria: a case-control study. *The Journal of Maternal-Fetal & Neonatal Medicine*; 22(9):765-9

Loto OM, Adewuya AO, Ajenifuja OK, Orji EO, Ayandiran EO, Owolabi AT, Ade-Ojo IP(2010). Cesarean section in relation to self-esteem and parenting among new mothers in southwestern Nigeria. *Acta Obstetrica Gynecologica Scandinavica*.;89(1):35-8.

Makanjuola R (2012). Day to Day hospital Management in: Water must flow Uphill: An Adventure in University Administration\ . Mosuro Publishers, Bodija Ibadan , Nigeria: pages 34-35,

Makinde ON, Adegoke OA, Adediran IA, Ndububa DA, Adeyemi AB, Owolabi AT, Kuti O, Orji EO, Salawu L.(2009) HELLP syndrome: the experience at Ile-Ife, Nigeria. *Journal of Obstetrics and Gynaecology*; ;29(3):195-9

Malomo OO, Kuti O, **Orji, EO**, Ogunniyi SO, Sule SS(2006)_A randomized controlled study of Non closure of peritoneum at caesaren section in a Nigerian population. *Journal of Obstetrics and Gynaecology*; 26(5): 429-432

Megafu and Ozumba, B.C. (1991). "Morbidity and mortality from induced abortion at the University of Nigeria Teaching Hospital, Enugu: a five year review." *International Journal of Gynaecology and Obstetrics* 34:163.

Ndukwe KC, Ugboko VI, Ogunlola IO, **Orji EO**, Makinde ON.(2004). Orofacial Injuries in Eclamptic Nigerians. *African Journal of Reproductive Health*; 8 (3) : 147-151.

Nigerian Demographic and Health Survey (NDHS) 2008. Abuja National Population Commission. ICF Macro 2009.

Okonofua, F.E. and R.C. Snow, et al.(1995). "Prevalence and risk factors for infertility in Nigeria." Technical report presented to Ford Foundation.

Okonofua, F.E. (1994). "Induced abortion: a risk factor for secondary infertility in Nigerian women." *Journal of Obstetrics and Gynaecology* 14:272-276.

Okonofua, F.E. (1995). "Factors associated with teenage pregnancy in rural Nigeria." *Journal of Youth and Adolescence* 24, 4:419-438.

Onile TG, Kuti O, **Orji EO**, Ogunniyi SO(2008).A prospective randomized clinical trial of urethral catheter removal following elective cesarean section.International Journal of Gynaecology and Obstetrics 102 (8):267-270.

Onwudiegwu U, Makinde ON, Ezechi OC, Adeyemi A (1999). Decision-Caesarean delivery interval in a University hospital : implication for maternal mortality and morbidity vol 19. 30-33

Orji EO, Ogunniyi SO (2001): Sexual behaviour of infertile Nigerian Women. *Journal of Obstetrics and Gynaecology*, Vol. 21, (No. 3). 303-305.

Orji EO, Dare FO, Makinde ON, Fasubaa OB (2001): Determinants of mission house delivery among booked patients in a Nigerian Teaching Hospital, *Journal of Obstetrics and*

Orji EO, Dayo AA, Malomo OO (2002): Rupture of the Pregnant Uterus in a Primigravida – A Case Report, *Tropical Journal of Obstetrics and Gynaecology*. Vol. 19, No 1 : 49-50.

Orji EO, Kuti O, Fasubaa OB (2002): Impact of infertility on marital life in Nigeria. *International Journal of Obstetrics and Gynaecology* vol. 79(1): 61-62.

- Orji EO**, (2002). Analysis of Obstructed labour at Ife State Hospital, Ile-Ife, Nigeria. *Sahel Medical Journal* vol. 5(3): 143-146.
- Orji EO**, Ogunlola IO, and Onwudiegwu U (2002). Brought in Maternal Deaths in South West Nigeria. *Journal of Obstetrics and Gynaecology* vol. 22(4): 385-388.
- Orji EO**, Onwudiegwu U (2002). Prevalence and Determinants of contraceptive practice in a defined Nigerian Population. *Journal of Obstetrics and Gynaecology* vol. 22(5): 540- 543
- Orji EO**, Fasubaa OB, Onwudiegwu U, Dare FO, Ogunniyi SO (2002): Decision-intervention interval in ruptured uteri in Ile-Ife, Nigeria. *East African Medical Journal* vol. 79(6): 55-57.
- Orji EO**, Onwudiegwu U (2003): Contraceptive practice among married market men in Nigeria. *East African Medical Journal*; 80(7): 357-360.
- Orji EO**, Ogunniyi SO, Onwudiegwu U (2003). Quality Assessment of Family Planning Services in Ife-Ijesa Administrative Health Zone: Clients perspective. *Tropical Journal of Obstetrics and Gynaecology*; 20(1): 28-31
- Orji EO**, Ogunniyi SO, Onwudiegwu (2003). Beliefs and Perceptions of pregnant woman at Ilesa about caesarean section. *Tropical Journal of Obstetrics and Gynaecology* ; 20(2): 141-143
- Orji EO**, Esimai OA (2003). Introduction of Sex Education into Nigerian Schools: The Parents' Teachers and Students' Perspective. *Journal of Obstetrics and Gynaecology*; 23(2): 185-188.

- Orji EO, Adeyemi AB, Esimai OA (2003).** Liberalisation of abortion laws in Nigeria, the undergraduates perspective. *Journal of Obstetrics and Gynaecology*; 23(1): 59-62
- Orji EO, Ndububa VI.(2004)** . Obstetric performance of women aged over forty years. *East African Medical Journal*; 81(3):139-141.
- Orji EO, Shittu AS, Makinde ON, Sule SS(2004).**Effect of prolonged birth spacing on maternal and perinatal outcome. *East African Medical Journal*; 81(8):388-391
- Orji EO, Esimai OA. (2005).** Sexual behaviour and contraceptive use among secondary school students in Ilesha South west Nigeria. *Journal of Obstetrics and Gynaecology* ;25(3):269-272
- Orji EO, Fajewonyomi BA, Adetunji SA(2005).** Influence of discipline of study on contraceptive usage among undergraduates in southwest Nigeria. *European Journal of Contraception and Reproductive Health Care*, 10(4):244-248.
- Orji EO, .Adegbenro CA, Olalekan AW(2005).** Prevalence of sexual activity and family planning use among undergraduates in Nigeria. *European Journal of Contraception and Reproductive Health Care* 10(4):255-260
- Orji EO, Ojofeitimi EO, Esimai AO, Adejuyigbe E, Adeyemi AB, Owolabi OO.(2006).**Assessment of delays in receiving delivery care at a tertiary healthcare delivery centre in Nigeria. *Journal of Obstetrics and Gynaecology*; 26(7):643-4
- Orji EO, Ojofeitimi EO, BA Olarenwaju (2007).** The role of men in family planning decision making in urban and rural Nigeria. *European Journal of Contraception and Reproductive Health Care* 12(1):70-75.

- Orji EO, Ojofeitimi EO, Adeyemi AB, Esimai AO, Adejuyigbe E, Owolabi OO**(2007). Time –Motion Studies of Obstetric Emergencies in a Teaching Hospital . Journal of Turkish-German Gynaecological Association 8(2):172-176.
- Orji EO, Adegbenro CA, Akinniranye, Ogunbayo GO, Oyebadejo AE**(2007). Spousal Communication on Family Planning as a Safe Motherhood Option in Sub-Saharan African Communities. Journal of Chinese Clinical Medicine 21(61):328-335.
- Orji E, Agwu F, Loto O, Olaleye A**(2008). A randomized comparative study of prophylactic oxytocin versus ergometrine in the management of third stage of labour. International Journal of Gynaecology and Obstetrics 101(2):129-132.
- Orji EO** (2008). Evaluating progress of labor in nulliparas and Multiparas using the Modified WHO Partograph . International Journal of Gynaecology and Obstetrics ,102 (8):249-252 .
- Orji EO, Olaleye OA, Loto OM, Ogunniyi SO**(2008). A randomized controlled trial of exteriorization and non exteriorization of the uterus at caesarean section. Australian- New Zealand Journal of Obstetrics and Gynaecology 48(6):570-574
- Orji EO.** Comparative Study of the Impact of Past Pregnancy Outcome on Future Fertility(2008). Singapore Medical Journal. . 49(12):1021-4.
- Orji EO, Olabode TO, Kuti O, Ogunniyi SO** Randomised controlled trial of initiation of oral feeding after caesarean section(2008). The Journal of Maternal-Fetal & Neonatal Medicine. 22(1):65-71

- Safe Motherhood (1995). Who decides on family size. A WHO Safe Motherhood publication of Worldwide activity, issue 19(3):page 9
- Singh, S., J. E. Darroch, M. Vlassoff, and J. Nadeau. (2004). Adding it Up: The Benefits of Investing in Sexual and Reproductive Health Care. Washington, DC, and New York: The Alan Guttmacher Institute and the United Nations Population Fund.
- Ross J., and W. Winfrey(2002a). "Contraceptive Use, Intention to Use and Unmet Need during the Extended Postpartum Period." *International Family Planning Perspectives* 27 (1): 20–27.
- Ross, J., and W. Winfrey(2002b). "Unmet Need for Contraception in the Developing World and the Former Soviet Union: An Updated Estimate." *International Family Planning Perspectives* 28 (3): 138–143.
- Ukpong D, **Orji EO**.(2006). Mental health of Infertile Women in Nigeria. *Turkish Psikiyatr Dergisi*; 17(4):1-7.
- United Nations Population Fund (UNFPA). 2005. "State of World Population 2005: The Promise of Equality—Gender Equity, Reproductive Health and the MDGs: Press Summary." New York, NY: UNFPA. Available at <http://www.unfpa.org/swp/2005/presskit/summary.htm> [accessed March 31, 2006].
- United States Agency for International Development (USAID)(2004). "Child Survival and Health Programs Fund Progress Report." Washington, DC: USAID.
- USAID (2006) Maternal and Neonatal Health Technical Update | No.3 June 2006
- WHO, UNICEF, and UNFPA and World Bank (2012). Trends in Maternal Mortality, 1990-2010.
- Willson, J. Robert(1988), "The Conquest of Cesarean Section-Related Infections: A Progress Report," *Obstetrics and Gynecology*, Vol. 72, No. 3, Part 2.: 519-532.

World Health Organization(2012) 'Trends in maternal mortality
Facts Sheet No 348, WHO Media centre, May 2012.'