



Influence of Culturally-based Abdominal Massage and Antenatal Care Uptake among Pregnant Women in a Tertiary Hospital in Southern Nigeria

Ekine Atombosoba Adokiye^{1*}, Adhuze Judit Isioma¹ and West Obaabo Levi²

¹Department of Obstetrics and Gynecology, Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State, Nigeria.

²Department of Radiology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria.

Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJMMR/2016/27109

Editor(s):

- (1) Edward J. Pavlik, University Kentucky Medical Center, Division of Gynecological Oncology, USA.
- (2) Yoshihiro Nishida, Department of Obstetrics and Gynecology, Faculty of Medicine, Oita University, Yuhu-city, Japan.
- (3) Salomone Di Saverio, Emergency Surgery Unit, Department of General and Transplant Surgery, S. Orsola Malpighi University Hospital, Bologna, Italy.

Reviewers:

- (1) Sevgul Donmez, Gaziantep University Faculty of Health Sciences, Turkey.
 - (2) Shikha Rani, Government Medical College & Hospital, Chandigarh, India.
 - (3) Sahar M. Nour El Din, Ain Shams University, Egypt.
 - (4) Charbell Miguel Haddad Kury, Medical School of the municipality of Campos dos Goytcazes, State of Rio de Janeiro, Brazil.
- Complete Peer review History: <http://www.sciencedomain.org/review-history/16652>

Original Research Article

Received 19th May 2016
Accepted 20th September 2016
Published 25th October 2016

ABSTRACT

Background: Abdominal massage in pregnancy has been reported for thousands of years in many societies and cultures all over the globe. They have been mostly culturally based and benefits to the pregnant women have been claimed, however this is a subject for scientific evaluation.

Objectives: The purpose of this study is to evaluate the incidence and influence of abdominal massage among pregnant women, despite the accessibility of antenatal care.

Methods: This is a cross-sectional study using a structured questionnaire administered on pregnant women attending antenatal clinic at the Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State.

Results: A total of 150 pregnant women were interviewed at booking. The mean age of the women

*Corresponding author: E-mail: adokin1960@gmail.com;

was 29.9±5.1 years, 34% had tertiary education. The mean gestational age at booking was 28.8±7.4 weeks and the median parity was 2.0000. Among the respondents 78% had abdominal massage in the index pregnancy; 32.5% and 35% weekly and monthly respectively. Abdominal massage was not free, fees were paid. Majority 64.1% had complaints after the massage. Among the respondents 48.7% had abdominal massage by TBAs (traditional birth attendants). Meanwhile, 22.2% had abdominal massage because it was the usual cultural practice of pregnant women, others 18.8% had massages because they sought relief for abdominal pain.

Conclusion: Majority, ¾ of the respondents preferred and had regular abdominal massage in concurrent with antenatal. It's therefore evident, that abdominal massage has tremendously influenced our expecting women's attitude towards antenatal uptake; in spite of its associated implications on feto-maternal performance reported in an earlier studies in the Niger Delta Hence adequate education and advocacy is necessary in respect to singular and consistent uptake of modern antenatal care.

Keywords: Antenatal care; abdominal massage; traditional and cultural practice; cost.

1. INTRODUCTION

The practice of abdominal massage in general and in pregnancy dates back thousands of years ago. It has been practiced in many cultures and regions of the world including Asia, Central America, Sweden, and China, and in some countries in Africa; like Egypt and Nigeria etc. [1,2,3,4]. There is substantial literature relating to abdominal massage as practiced in the Ancient Maya's Dynasty [1]. Dr. Rosita Arvigo has extensively studied the Maya system of abdominal massage under the last Maya's Shaman Don Elijo. Currently practicing a modified version of the technique called Arvigo Techniques of Maya abdominal massage: adapting to the current medical knowledge and requisite. Swedish massage which is generally a body massage was developed in 1812 by Henri Peter Ling [2]. In ancient Malaysia, and in the Philippines, massage was a regular practice to expel the unwanted pregnancy, also called bromo and hilot respectively [3]. There are no written records of the ancient practice of abdominal massage in the Niger Delta region. However, oral history shows that the practice has been a traditional and cultural healing approach for centuries if not thousands of years. In the rural communities in the Niger delta especially among the Ijaw ethnic extraction it is an integral part of the traditional medical practice. In recent studies on obstructed labour done at the Niger Delta University Teaching hospital, 65.2% of the patients undergo abdominal massage in the index pregnancy at a TBA (traditional birth attendant) place before presentation [5]. There may be some benefits, though with a high level of subjectivity. However, practitioners still need adequate expertise and knowledge of the human anatomy. Moreover, understanding the best time of application of the method should be of

paramount importance. Several literatures and information from verbal traditional town criers, practitioners of TBAS and herbalists have often advocated some of the medical importance and gain achieved from massage [6,7]. Others have mentioned its role in fertility, and in reducing premenstrual syndrome (PMS) in young women [3,6]. In spite of all these fantastic benefits reported from both abdominal and general body massage, the outcome and patient satisfaction is purely based on subjective individual feelings. Abdominal massage during pregnancy has been reported to be useful though, in some instances, but could be a very harmful practice also, therefore requires caution as proper timing and expertise could not be ignored [7,8]. Scientifically it has not been substantiated how beneficial it is to the pregnancy, as there are some certain conditions whereby, any abdominal manipulation maybe detrimental to the women and or the fetus: such as in placenta previa, unidentified ectopic pregnancies, previously scarred uterus, threatened abortions in early pregnancy < 20 weeks of gestation and others like active infection in pregnancy etc. [3,8]. Most of this practice is done by unskilled personnel passed down from generation to generation through traditional midwives, healers, shamans and even ordinary people as the tradition demands; who may not have adequate knowledge of the human anatomy and physiology of pregnancy [1,3,9]. However, there is no conclusive proof that professionally tailored abdominal massage has directly caused serious health problems in pregnancies while injudicious and unprofessionally practiced abdominal massage has been linked with some adverse medical effect. Most recent studies done in this Centre have found some negative correlation between abdominal massage in pregnancy and the later outcome of the pregnancies by

Ekine AA et al. [10] on the incidence of ectopic pregnancy. This study reports that, 77.0% of patients admitted on account of acute abdomen, with ruptured ectopic pregnancy presented few hours after abdominal massage was performed, mostly by either less experienced or unskilled local masseur. Regardless of the hormonal evidence of possible exiting pregnancy (positive urine pregnancy test); due to ignorance, the confirmation of the pregnancy site and viability by an ultrasonographic examinations before the procedure is ignored. In a recent study on placental abruption at the Niger Delta University Teaching Hospital by Abasi et al. [11] 72.2% of the patients had abdominal massages before the onset of the complaint [12]. Also in another study in the Niger Delta University Teaching Hospital, on the incidence of uterine rupture by Ekine A.A et al. [13], it was observed that, abdominal massage may have played a vital role. The study reported that, 72.4% of the uterine rupture occurred in patients with previously scarred uterus from cesarean section during labor after abdominal massage prior to presentation. Although not scientifically proven, there is obvious correlation between the poor fetomaternal outcome and some of the culturally motivated abdominal massage in pregnancy, highly prevalent in the southern region of the country. However, this may be as a result of lack of current medical knowledge, needs and challenges by adapting strictly to antenatal care services. Sometimes, it could be a direct demonstration of ignorance, illiteracy and pathological adherence to socio-cultural practices; prompting these service providers and clients (Traditional masseurs, healers, herbalist, TBAs and even the pregnant women) the self-confidence and moral rights to remain, retain and manage the pregnant women, irrespective of the apparent danger to both mother and baby with the assurance and aim of a better delivery even in high risk cases. There is need for adequate advocacy on the importance of strict antenatal attendance and a widespread public campaign on the influence of abdominal massage in pregnancy and its resulting effects especially in the rural communities to discourage the practice. If the demands remains the same, specially trained health workers and those traditional masseurs may be retrained about some of the possible obstetric dangers; to practice the abdominal massage when needed, with the approval of the professionals'. In many cultures, massage is done throughout pregnancy and in the post-natal period as a matter of routine, even regarded as essential to a normal healthy

pregnancy [1,9]. The objectives of the study is to discourage the mainly unprofessionally tailored excessive influence played by abdominal massage among pregnant women, and to stress the importance and benefits of strict antenatal care, and those factors preventing pregnant women from registering early for the antenatal care services in the Niger Delta region.

2. MATERIALS AND METHODS

This is a descriptive cross sectional questionnaire based survey with a sample population of 150 women attending the antenatal clinic at the Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State, in South-South Nigeria, between 1st. January 2015 to 31st. December 2015. The questionnaire was admitted to the subjects (Pregnant women) while on their routine antenatal visit. Only antenatal attendees were included, it was optional for every patient. Some of the limitations were the duration of the study and also majority of our patients were referred (unbooked) patients who came for treatment or delivery and they were excluded from the study. The apparently low number of deliveries for a Teaching Hospital is due to the fact that, the hospital is located in a rural setting with low population relatively far from the nearest town. Although, apart from patients coming from nearby villages, it mainly a referral center for obstetric patients with complications. A multiplicity of ethnic groups attend the antenatal clinic, but mainly the Ijaws of the Niger Delta .Women of other ethnic groups that attend the antenatal clinic are of Urohobo, Isoko, and Igbo. Ethical approval for the study was obtained from the hospital ethical committee. The women were approached while on their routine visits and the questionnaire were administered on them, by trained personnel, after adequate counselling and informed verbal consent had been obtained. All pregnant women at booking were approached regardless of gestational age of the pregnancy. Information considered in the questionnaires were the age, parity, employment and educational status of the women. Others were the reason for undergoing abdominal massage despite registration for outright care in hospital, reasons for delay in ANC registration, complications after massage, source of information. Excluded from the study were those who were admitted during labor for delivery. Finally, questionnaire designed for the study and data were entered using the Epi info 7 version 1.4.0.

3. RESULTS

A total of 150 respondents participated in the survey and the hospital recorded an annual average of 563 deliveries. There was a relatively small number of respondents, due to the fact that, not all patients were willing, more so, about one third of our deliveries are from unbooked patients who were self-referred or referred from other health institutions. Most of the respondents were married 82.7%, had secondary level of education, while 34.0% had tertiary education. The dominant ethnic group were the Ijaws due to the location of the survey, 52.7%, majority were Christians 98.0%, and 2.0% were Muslims, also large proportion of the respondents have good livelihood as, 48.0% were either craftsmen or traders, 22.7% are civil servants and 3.3% were professionals as shown in Table 1.

Table 1. Socio-demographics of respondents (n=150)

Age (years)	Frequency	Percent
10-19	6	4.00%
20-29	97	64.67%
30-39	40	26.67%
40-49	7	4.67%
Marital status	Frequency	Percent
Married	124	82.67%
Cohabiting	26	17.33%
Religion	Frequency	Percent
Christian	47	98.00%
Islam	3	2.00%
Education	Frequency	Percent
Primary	16	10.67%
Secondary	83	55.33%
Tertiary	51	34.00%
Ethnicity	Frequency	Percent
Hausa	1	0.67%
Yoruba	6	4.00%
Other minorities	22	14.67%
Igbo	42	27.66%
Ijaw	79	52.67%
Total	150	100.00%
Occupation	Frequency	Percent
Applicant/Students	27	18.00%
Trader/ Craftsmanship	72	48.00%
Civil servant	34	22.67%
Peasant farmer/ House wife	12	8.00%
Professional	5	3.33%

Nulliparous women among the respondents account for 25.3%, those with lower parity between 1-3 deliveries accounts for 57.3%, while multiparous and grand multiparous women were 17.3%. More than $\frac{3}{4}$ of the respondents registered for their antenatal visit between second and third trimester in Table 2.

Table 2. Obstetrics history of the respondents (n=150)

Parity	Frequency	Percent
0	38	25.33%
1-3	86	57.33%
≥4	26	7.33%
Pregnancy stage on registration	Frequency	Percent
First trimester	6	4.00%
Second trimester	71	47.33%
Third trimester	73	48.66%

Reasons why women opted for abdominal massage vary, abdominal pain was among the highest 18.8%, trade-cultural reason, 22.2%, advice from friends, neighbors, family members and peer pressure accounts for 26.5%, while, benefit to baby, prolongation of pregnancy and repositioning of the baby in the womb was 23.1% cumulatively in Table 3.

According to the respondents, 7.7% of the abdominal massage was done by nurses, midwives. 48.7% was done by the TBAs, 29.9% by local community masseurs, while 13.7% was done by other unskilled personnel. The respondents also reported that most of them were informed by family members 48.7%, friends and neighbors contributed 43.6%, only 7.7% decided on their own in Tables 3-4.

Less than a quarter said the procedure is better than the modern health care delivery. Only 3.7% said the masseurs were cheerful, and more understanding than the health workers, and 4.4% said abdominal massage is cheaper than the hospital cost. When asked why report late to antenatal care; 8.0% considered distance and transportation as the cause, 30.7% due to cost, 32.7% due to stressfulness, and 12.0% for health workers strikes. 24.8% of the respondents are of the opinion that local masseur treats them better than the health workers in Table 4. Apparently, on the issue of financial implication for the abdominal massage procedures, 100.0% of all the respondents agreed that, abdominal massage was not free in Table 4.

Table 3. Reason for abdominal massage (n=117)

Reason	Frequency	Percent
Abdominal pain	22	18.80%
Benefit to baby	9	7.70%
Trado-cultural practice	26	22.22%
Pressure from (Pastor, friends, family etc.)	31	26.49%
Fear of dangers for the baby	5	4.27%
Self-satisfaction since childhood	4	3.42%
Reposition of baby and keep baby well	15	12.82%
To reduce tensions and free nerves	2	1.71%
To prolong duration of pregnancy	3	2.56%
Place of massage	Frequency	Percent
Local community masseur	35	29.91%
TBAs (home)	57	48.72%
Mother and relatives	7	5.98%
Neighbors and friends	9	7.69%
Nurses and midwives	9	7.69%
Information abdominal massage	Frequency	Percent
Family (Husband, mother, relatives)	57	48.72%
Friends and neighbors	51	43.59%
Personal decision	9	7.69%

In terms of the frequency, substantial number of the respondents 32.8% had abdominal massage once a week, while 35.0% had abdominal massage once in every month during the pregnancy, as regards post massage complaints and complications. 31.1% had abdominal pains, 23.9% had general body pains, and 6.0% had vaginal bleeding, while 35.9% had no complaints in Table 5.

4. DISCUSSION

According to current WHO statistics Nigeria still remains one of the leading countries with the poorest feto-maternal morbidity, mortality indexes [14,15]. Recent WHO and National statistical data base puts, Nigerian Maternal mortality rate at about 820/100,000 live births yearly as at 2014, while perinatal mortality rate is within the range of 200-300/1000 live births yearly as at 2010 statistics [14,16,17]. It is an alarming figure, even worst, when considering the six geopolitical zones of the country, with the North-East zone recording highest maternal mortality rate of about 1,549/100,000 live birth and perinatal mortality rate of about 269/1000 live births more than twice the countries average [14,17]. Therefore all efforts and programs which could enhance good feto-maternal outcome should be highly encouraged, to discourage people from acts like unguided abdominal massage during pregnancy that may directly or

indirectly affect feto-maternal morbidities, and mortalities observed in previous studies in the Niger Delta Region [10,13] and [11]. Even though a study published in the Journal of Psychosomatic Obstetrics and Gynecology in 1999 buttresses the fact that, prenatal massage decreased anxiety and stress hormones, resulting in fewer obstetric and postnatal complications, including lower pre-maturity rates, this study tries to assess why patients prefer abdominal massage, rather than registering early and strictly adhering to antenatal care, and doing ultrasound scan to assess the viability of the fetus and the general physical health of the woman first. Although the study was done in a rurally located teaching hospital, most of the participants in this study were educated beyond the primary level of education, and have good sources of livelihood. All the participants were booked, who represent a lower risk group as compared to the unbooked in previous studies, and this group of participants are of a relatively better socio-economic state. When compared with other studies done in the region and the country on related issues where the socio-economic background of patients negatively influence their attitude towards healthcare and ANC uptake [13,17]. Considering the socioeconomic and educational background of most of the respondents in this study, we anticipated lesser patronize of abdominal massage and more, who will strictly adhere to

ANC and early registration during their pregnancies, unfortunately the outcome was different [18,19,20,21]. As about 96.0% of the respondents registered for Antenatal care in their second and third trimesters. Perhaps, medical cost is the major cause, unfortunately, it's not the only reason as many do not consider cost as a deterrent factor; rather trado-cultural beliefs and peer pressure are the major driving forces in patient's decision making. Furthermore, ignorance, lack of good health awareness among pregnant women in the society could be responsible for the reasons why many respondents opt for abdominal massage, when

they experience abdominal pain, for relief of their problems. Others do so with the belief of repositioning the fetus in the uterus for safer delivery, which may result in several adverse effect such as an abruption placenta, ante partum hemorrhage, preterm labor, intrauterine fetal demise, and often uterine rupture [13,12]. One of the preventable feto-maternal fatal incidences was a case report of ruptured spleen causing fetomaternal demise in the Delta State University Teaching hospital in Oghara, Nigeria as a result of abdominal massage by quacks [7]. Professional therapists are therefore advised to avoid abdominal massage in the first trimester

Table 4. Influence of abdominal massage affecting late registration for ANC (n=135)

Opinion about abdominal massage	Frequency	Percent
No comment	28	20.74%
Not better	89	65.93%
Yes better	18	13.33%
Opinion about masseur and procedure	Frequency	Percent
More cheerful and sympathetic	5	3.70%
Cost is cheaper	6	4.44%
Communicate and relate better	2	1.48%
Makes baby healthier	1	0.74%
Private and more relaxed	2	1.48%
To position baby and womb well	2	1.48%
no comment	28	20.74%
Not superior to modern practice	89	65.93%
Reasons for late antenatal	Frequency	Percent
Bad experience	4	2.67%
Distance and transportation	12	8.00%
Health workers strikes	18	12.00%
Socio-cultural reasons	3	2.00%
Cost and financial implications	46	30.67%
Massage is better and easier	3	2.00%
Stressful	49	32.67%
Booked early	15	10.00%
Abdominal massage in index pregnancy	Frequency	Percent
No	33	22.00%
Yes	117	78.00%
Abdominal massage in previous pregnancy	Frequency	Percent
No	56	37.33%
Yes	94	62.67%
Better hospital attention	Frequency	Percent
No	88	75.21%
Yes	29	24.80%
Total	117	100.00%
Cost of massage/ section(naira)	Frequency	Percent
₦ 500	78	66.67%
₦1000	29	24.79%
₦ 1500	10	8.55%

due to increased rate of abortion at that stage, and also minimize abdominal massage to high-risk pregnancy clients even in their second and third trimesters [22,23]. Those shamans, unskilled masseurs and the TBAs are not just interested in, or aware of the clinical outcome of their practice. They are ignorant of the dangers involved in continuing the practice even in such situations [7,8]. In this study participants said that, each abdominal massage visit costs them between (₦500-₦1500) naira, equivalent to approximately (\$2.7-\$7.90) at an exchange rate of ₦190 naira to \$1.00 US dollars. From the above mentioned figures it is understandable that, abdominal massage among the pregnant population is a lucrative business for the local unskilled masseurs and TBAs. When considering the socioeconomic situation of the region, where the average daily income is within the range of ≤ \$ 3.00, they still lure these innocent women for serial abdominal massage rather than counselling them strictly on the need for ANC. Generally, ANC is cheap in the region and the overall cost per pregnancy circle is approximately ≤\$ 3.00. It is very glaring and dangerous that, among the respondents, majority 62.7% had abdominal massage in their previous pregnancies and 78.0% in their index pregnancy by unskilled local masseurs and TBAs, who may not, or, due to ignorance have less safety concern about the pregnancy. Meanwhile, from previous studies in the Niger Delta University teaching hospital and from other centers it is evident that, those with history of abdominal massage represented the bulk of patients with negative fetomaternal outcome [8,10,22,24]. In contrast, other studies have shown that those women attending regular antenatal care in pregnancy have better pregnancy outcomes and would have better motivation and inclination to submit themselves for other healthcare services like breast cancer screening, cervical cancer screening and even family planning, than those who patronize the local delivery homes. [19,24,20]. Despite the fact that body and abdominal massage in skilled hands has some positive mental, physical and emotional effect on humans by reducing stress, alleviation of pains and sometimes relaxes the patient, it could also be very dangerous and could be harmful to both mother and child in unskilled hands as has been seen in our daily practice in this part of the country where, 48.7% and 29.9% of the abdominal massage is done by unskilled community masseur and TBAs respectively [6,7,8,11,25,21]. However, the frequency, reasons and timing of abdominal massage

without the involvement of the expertise deserves adequate review in the region. In this study 40.2% of the respondents had one to three abdominal massage(s) per week, while 59.8% of the respondents had one to three abdominal massage(s) per week. Reasons for the abdominal massage includes, abdominal pain 18.8%, trado-cultural practice 22.2%, and others like positioning of baby 12.8%; whereas the role of family members, friends, and neighbors is important as 26.5% women had advice for abdominal massage from this group. The timing of the abdominal massage also needs some degree of attention as most of the respondents had regular abdominal massage even after late second trimester of the pregnancy; during which the tendency of increase in inducing late abortions, or preterm labor or even placenta abruption or fetal death is high [2,12,22]. A small proportion of the respondents' feel abdominal massage is more helpful than modern health care practice (ANC). Most respondents rather patronized the abdominal massage and reported late for ANC because of cost 30.7% which is contradicting, when compared with the amount spent on abdominal massage. Among the opinions from the respondents 32.7% and 12.0% opted for abdominal massage due to the stressfulness of the ANC and consistence health workers strike in the region. Interestingly, only 23.9% were satisfied with the attention and the benefit of the abdominal massage. However, despite the availability of acceptable antenatal care coverage in the region, some patients still ignore attending ANC early as a result of some of the factors observed from the study. Hence newer modalities as regards the benefit of ANC care, time and convenience management be advocated to attract patients for better or strict adherence to ANC be instituted. However if the demand for abdominal massage is high, patients should seek for professional advice, and proper training of competent skilled masseurs to be engaged in the practice so as to avoid some of the negative outcomes. These and other measures could help improve the appalling fetomaternal outcome experienced daily in our practice in this part of the country. Finally, this uncontrolled abdominal massage in pregnancy and late presentation in antenatal booking have some multi-factorial effect on our present health care dispensation; such as cost, perinatal wastage, maternal morbidity and mortality as a result of misconceptions and ignorance of majority of the population irrespective of their level of education [21,26].

Table 5. Frequency of massage and complains after abdominal massage (n=117)

Number of massage (weekly)	Frequency	Percent
1	38	32.48%
2	7	5.98%
3	2	1.71%
Number of massage (monthly)	Frequency	Percent
1	41	35.04%
2	18	15.38%
3	11	9.40%
Type of complains after massage	Frequency	Percent
Abdominal pain	37	31.62%
General body pain	28	23.93%
Excessive fetal kick	3	2.56%
Bleeding par vagina	7	5.98%
No complains	42	35.89%

5. CONCLUSION

Abdominal massage during pregnancy may have contributed to late registration for the antenatal care. It does not only involve additional cost to the pregnant women but also causes varied complications in pregnancy as reported in other studies [5,7,8,13]. This practices with no statistically evidence based benefit to the mother and the unborn child need to be discouraged, with effective health education by health personnel and government intervention.

ACKNOWLEDGEMENT

We do appreciate and acknowledge all our antenatal patients for support, and the antenatal clinic nurses, house officers, resident doctors and other staff of the department of Obstetrics and Gynecology NDUTH, for making data possible and available.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. The Arvigo Techniques of Maya Abdominal Therapy. Available: <https://arvigotherapy.com/>
2. Malcolm P, Maura G, Juddy T. Thousand-year-old depictions of massage abortion;

- FFPRHC J Fam Plann Reprod Health Care. 2007;33:4.
3. Calvert, Robert Noah. "Swedish Massage" Massage magazine. (Retrieved 15 June 2013)
4. What is Traditional Chinese Massage? 365tcm.com. 2008-10-17. (Retrieved 2013-02-26)
5. Ekine AA, Ibrahim IA, Abasi I. Socio-cultural and economic influence in the incidence of obstructed labor: 5 years review in NDUTH. Int J Innov Res Dev. 2015;4:1. ISSN: 2278-0211.
6. Amy Siger, Hands-on Care Can Rub Out Pain; Feburary 22, 1987 by special Features / Syndication sales, Chicago Tribune.com
7. Igberase GO, Maternal and fetal deaths from ruptured spleen following abdominal massage by traditional birth attendants in the Niger Delta. 2012;3:1.
8. Ugbomo HA, Akani CI. Abdominal massage: Another cause of maternal mortality. Niger J Med. 2004;13:259-262.
9. Field T, et al. Pregnant women benefit from massage therapy. Journal of Psychosomatic Obstetrics and Gynecology. 1999;19:31-38.
10. Ekine AA, Harry CT, Ibrahim IA, Abasi I. Ectopic pregnancy in NDUTH, Okolobiri- 5 year case retrospective review. Indian J Med Res Phar Sci. 2014;1:7. ISSN: 2349-5340.
11. Abasi JI, Jeremiah I, Ekine AA. Risk factors and pregnancy outcome of placental abruption at the Niger Delta University Teaching Hospital, Okolobiri, South-south Nigeria. British J Med & Med Res. 2015;5(8):1000-1006. Article no. BJMMR.2015.110. ISSN: 2231-0614.
12. Wagle RR, Sabroe S, Nielsen BB. Socioeconomic and physical distance to the maternity hospital as a predictors for place of delivery: An observation study from Nepal; BMC Pregnancy and Childbirth. 2004;4:8. DOI: 10.1186/1471-2393-4-8
13. Ekine AA, West O, Udoye EP. Determinants and factors influencing the prevalence of uterine rupture in a tertiary Rural Hospital in the Niger Delta: A 5 years retrospective study in NDUTH, Okolobiri. Undergoing Peer Review by J Pharm Biomed Sci.

14. Mother, Newborn and child health and mortality in Nigeria-general facts; Federal Ministry of Health, Family Planning Division; 2010.
15. World Bank Data Site at. Available: <http://beta.data.worldbank.org>
16. World Health Organisation. Why do so many women still die in pregnancy? Geneva: WHO; 2010.
17. Mukosolu N. C. Onwughalu. Infant mortality rate in Nigeria. March 16; 2007. Mukongchi.blogspot.com
18. Field T, et al. Labour pain is reduced by massage. Journal of Psychosomatic Obstetrics and Gynaecology. 1997;18(4): 286-91.
19. Ebeigbe PN, Igberase GO. Antenatal care: A comparison of demographic and obstetric characteristics of early and late attendees in the Niger delta, Nigeria. Med Sci Monit. 2005;11(11):529–532. [PubMed]
20. Okunlola MA, Owonikoko KM, Fawole AO, et al. Gestational age at antenatal booking and delivery outcome. Afr J Med Med Sci. 2008;37(2):165–169. [PubMed]
21. Gharoro EP, Igbafe AA. Antenatal care: Some characteristics of the booking visit in a major teaching hospital in the developing world. Med Sci Monit. 2000;6(3):519–522. [Pub Med]
22. Charles N. T. Amakiri, Chris Akani. Traumatic Injuries in the Newborn from abdominal massage in pregnancy. Nig Jnl Orthopaedics & Trauma. 2003;2(2):137-139.
23. Elaine Stillerman, LMT; Prenatal massage during the first trimester.
24. Mbamara SU, Obiechina NJA, Eleje GU, an analysis of uterine rupture at the Nnamdi Azikiwe University Teaching Hospital Nnewi, Southeast Nigeria. Nigerian Journal of Clinical Practice. 2012;15:4.
25. Howell, Julie, NMT, PMT. Prenatal health through massage therapy: For women and their babies. Available:<http://www.newlifejournal.com/decjan03/howell/01/03/full.shtml> Article accessed online 10/18/2007
26. World Health Organisation. Why do so many women still die in pregnancy? Geneva: WHO; 2010.

© 2016 Adokiye et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

*The peer review history for this paper can be accessed here:
<http://sciencedomain.org/review-history/16652>*