

EFFECT OF TRAINING ON FIRST-AID MANAGEMENT OF SELECTED OBSTETRIC EMERGENCIES BY TRADITIONAL BIRTH IN OGBOMOSO: AN INTERVENTION STUDY

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Abstract

Maternal mortality remained prevalent in developing countries despite adopted measures to reduce its occurrence. The W.H.O (2015) recorded a maternal mortality ratio of 239 per 100,000 live births in developing countries as against 12 per 100,000 live births in developed countries. Studies attributed this anomaly to inadequate First-Aid knowledge and skills of Traditional Birth Attendants (TBAs) in managing obstetrics complications. This study examines the effectiveness of a training program on knowledge of first-aid management and skills on TBAs selected labour emergencies. One group pre-post experimental design was used and the sample size was calculated using Cochran formula to select 111 TBAs. These were randomly selected out of 150 total numbers. Test paper on knowledge on first-aid management (TP-KFM) and self-developed rating scale (SRS) on selected labour emergencies was used to collect data on the cognitive and psychomotor domains. Data collected were analysed using tables, percentages, means, and standard deviation while inferential statistics of paired t-test. Pre-intervention mean score of TBAs knowledge was 6.86 ± 2.47 while post means score of 17.66 ± 2.37 (mean gain 10.8). Pre-intervention means score of TBAs on first-aid management skills was 4.92 ± 1.93 while post-intervention means score of 11.46 ± 1.36 . There were significant differences between pre-post intervention knowledge of first aid management ($t= 46.91, p = 0.00$), and first-aid management skills ($t=39.571, p = 000$), of TBAs at 0.05 level of significant. The findings of this study show that the application of a training program on knowledge of first-aid management and skills of TBAs selected labour emergencies was effective. Hence, TBAs should be given regular training together with prompt supervision to be done by stakeholders for the TBAs.

Keywords: Maternal mortality, labour emergencies, Traditional Birth Attendants,

Introduction

Maternal mortality is noted to be prevalent in certain parts of developing countries despite the various measures adopted to reduce its occurrence globally. The adaptation of these measures started right from the era of Safe Motherhood to Millennium Development Goals 4 and 5, and now Sustainable Development Goals (SDGs) (WHO, 2015). Despite the introduction of all these measures which are adopted solely to work towards the reduction of maternal mortality rate, maternal mortality is still high (World Health Organisation, 2015). Maternal mortality is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of the duration of the pregnancy from any cause aggravated by the pregnancy or its management but not from accidental or incidental causes (World Health Organization, 2015, Adesokan, 2014).

Different factors are responsible for the increase in maternal mortality, ranging from direct and indirect causes, and some other underlying factors such as disparities between the rich and poor women, rural and urban residents (World Health Organization, 2015), including poor maternal and child health statistics in Nigeria. Likewise, inaccessibility and poor utilization of quality health care services, low literacy

level, distance to the location of health care services, and in particular, the use of TBAs by pregnant women (Ayede, 2012) have all been registered as other major factors responsible for the increase in maternal and child mortality rates. This is because pregnant women patronize traditional birth attendants (TBAs) despite various facts and studies that stated or documented lack of adequate or scientific knowledge by TBAs in giving quality care appropriately to pregnant women coupled with lack of use of the aseptic technique in handling pregnant women.

Additionally, the failure of referring serious or complicated cases by the TBAs to appropriate quarters has also contributed to the high rate of maternal mortality (Imogie, Agwubike, & Aluko, 2002).

Owens (2011) further stated that TBAs lack adequate skills in handling obstetrics emergencies, there is a lack of prompt access to obstetrics emergencies by pregnant mothers and 15% of women are prone to have obstetrics emergencies during labour. This aspect is not given the utmost attention in the quest to drastically reduce maternal and infant mortality rates (Gbadamosi, 2015). A traditional birth

attendant “is a person who assists the mother during childbirth and initially acquired her skills by delivering babies herself or through apprenticeship to other traditional birth attendants” (World Health Organisation/UNICEF/United Nations Population Fund, 1992). They are mostly women and have a low level of formal education (Shamsu-deen, 2013).

Sarker (2016) asserted that most pregnant women prefer to deliver at home, and the common reason for this is poverty. Equally, other reasons for the preference of TBAs by pregnant women include accessibility, services seen as user-friendly, high cost of hospital bill as the cost of TBAs services is considered cheaper, low educational status, poor road network, lack of qualified health professionals at health facilities. Likewise, expectant mothers prefer TBAs services because they believe that they can give spiritual care and the psychological support needed, the flexibility of services and payment to TBAs, escape from the anxiety of ending up with caesarean section, cultural and religious beliefs among other reasons (Mfrekemfon & Anucha, 2015; Ogunyomi & Ndikom, 2016; Oshonwoh, Nwakwuo & Ekiyor, 2014; Sarker, 2016).

Most pregnant women attend antenatal clinics for care while few delivers at the health facility, many pregnant women patronize the TBAs and only visit the clinic for immunization or when there are complications. Imogie (2011) confirmed that 49% out of 93% of women that registered for prenatal care in orthodox maternity centres delivered with the TBAs. Also, in 1991, a study was conducted in Ogbomoso, Oyo state, on 377 women who delivered on their way to the hospital, about 65% of the participants that attended after delivery outside the hospital were delivered by TBAs while 73.7% sought help post-delivery for retained placenta with bleeding (Fajemilehin, 1991). There is no gainsaying that the powerful effect of TBAs on communities has been noted and acknowledged, and the reason is that women are still patronizing them. Hence, the necessity to pay particular attention to the role of TBAs to stem an increase in maternal death. This is not unconnected with their wide acceptance and patronage because they dominate the control of maternal health services in most communities.

Though many studies indicate that training TBAs does not necessarily improve maternal mortality (Mboho, Eyo, & Agbaje, 2012) yet they conduct many deliveries at home despite the closeness of orthodox health services because they are preferred, and the provision of qualified and skilled birth attendants by the health authorities is not feasible in the nearest future. Consequently, there should be an effective program to prepare and improve their

competencies in conducting deliveries, sensitize them to early identification of dangers, initiate first-aid management of complications, and referral apart from intellectualizing them on their strengths. In addition to this, it has become necessary for the health authorities to work with them through efficient and effective coordination and supervision because they lack the expected medical knowledge and may attend to women inappropriately thereby exposing women to complications that may lead to their death (Imogie, 2009; Inyang & Anucha, 2015). On account of all these antecedents, this study was conducted to examine the effectiveness of training program on TBAs knowledge and skills with respect to first-aid management of selected emergencies in labour with the overall benefit of reducing maternal mortality rates in Nigeria.

Objective of the Study

The specific objectives are to:

1. Determine effects of training on the pre- and post-intervention knowledge of TBAs in first-aid management of some selected obstetrics emergencies of women in labour.
2. Examine effects of training on the pre- and post-intervention skills of TBAs in first aid management of selected women in labour emergencies.

Research Questions

1. What effects has training on the pre and post-intervention knowledge of TBAs on first-aid management of some selected obstetrics emergencies in labour?
2. What are the pre and post-intervention skills of Traditional Birth Attendants on first aid management of selected labour emergencies?

Hypotheses

HO₁: That training program has no significant effect on pre and post-intervention knowledge of TBAs on first aid management of selected emergencies of women in labour.

HO₂: That training program has no significant effect on pre and post-intervention skills of TBAs on first aid management of selected women in labour emergencies.

Materials and Methods

The study utilized one group pre-test/post-test experimental research design. One group was utilized because the size of the population of the study was small. The study population consists of 150 people that enrolled as members of the association of TBAs in Ogbomoso (Association Register 2021). The major occupation of the people in Ogbomoso is farming and trading with an average population well

educated. It is surrounded by many rural areas. The Ogbomoso community has a lot of TBAs practicing both in the town and the rural areas that surround it. The setting is the site where they gather for their monthly meetings. The centre for meeting of association of TBAs is in Ogbomoso South local Government which accommodates all TBAs in Ogbomoso and its environments. The headquarters of Ogbomoso South is in Arowomole and it has a population of 100,815 and an area of 68 km² (NPC, 2020).

The sample size was calculated using Cochran formula = $Z^2 p q / e^2$, $p=70\%$, error 5% and 95% confidence interval. The study sample size was 108; while the attrition rate of 10%, that is, 10.8 was added to it, which were approximately 119. Therefore, the sample size of 119 was randomly selected out of the 150-total number. One hundred and nineteen participants (119) were recruited but One hundred and eleven (111) participated completely to the end of the study. Test Paper on Knowledge of First-aid Management (TP-KFM) of some selected labour emergencies to gather data on the participants' cognitive domain based on Bloom taxonomy learning domain created by Benjamin Bloom in 1956.

The TP-KFM consists of twenty-one questions; the maximum score for the correct response was 21 points. The scores were categorized into three: scores between 1 and 9 were considered as below average, scores between 10 and 16 were considered as average knowledge, and scores between 17 and 21 were considered as above-average knowledge. Moreover, a Self-developed Rating Scale (SRS) on selected labour emergencies was used to collect data on the psychomotor domain of the participants through an observational method. The SRS consists of 14 responses. Skills of managing cord presentation, cord prolapse, and postpartum were enhanced in the study. The skills were rated between 0 and 1. Participants that did not perform the procedures correctly scored 0, and anyone who performed fairly well scored ½ point, while those that performed the procedures correctly scored 1 point. The maximum obtainable scores were 14. Scores between 0 and 6 were considered as below average knowledge, scores between 7 and 10 were regarded as average knowledge, while scores between 11 and 14 were regarded as above average.

TBAs' demographic Questionnaire (TBA-DQ), test paper, and self-developed rating scale were carefully constructed by the researcher to cover the content area of the study on knowledge on identification and first-aid management of selected Labour emergencies. These instruments were subjected to

correction by the supervisor and experts in the field. A proper correction was affected before the administration of the instruments. This procedure assures the face and content validity of the instruments.

The reliability of the instruments was established through an internal consistency approach. The instruments were administered to 30 TBAs from Oyo Township which was not in the same location as the sample for the research work and the correlation coefficient of internal consistency of the test was computed and Cronbach's Alpha value was found to be 0.78 for TP-KFM and 0.70 for SRS. Ethical approval for this study was obtained from Babcock University health review ethical committee with reference BUHREC 633/17 on July 15th, 2018. The Chairperson and other Executive Members of the TBAs Association were intimated with the research, also the respondents were informed about the research work, they were assured that all information will be treated confidentially and they were asked to sign an informed consent. A total number of ten research assistants were trained for two days by the researcher on the objectives of the study and also how to go about administration, collection of the test paper, and rating with a self-developed rating scale and how to ensure confidentiality and anonymity.

The members of the association of TBAs were met through the chairperson during their meeting days as it was agreed on by the researcher and the participants. The researcher familiarized and got acquainted with the participants. A good rapport was established, the objectives of the research were explained to them and they were informed that the study would cover about five sessions. The researcher and the participants agreed on topics to be discussed, duration of each session to be about one hour thirty minutes, convenient time and days of sessions and discussion will be in the local language to facilitate understanding. It was also agreed during this visit that they will be observed on their skills of managing cord presentation, cord prolapse, and postpartum haemorrhage. They were assured of the confidentiality of data and that they can withdraw at any stage of the research work without it having any negative implication on them. The researcher introduced the ten research assistants to the participants.

Intervention Phase

The intervention phase was in five sessions. The objective of this phase was to expose the participants to the teaching module of enhancing the training package of TBAs in identification and first-aid management of selected women in labour emergencies. This session was divided into four and

activities that were done in each of the sessions include the following:

Session one (1st week): Participants were re-oriented on the research protocol, informed and written consents were obtained, and pre-test instruments were administered.

Session two (2nd week): Training on first-aid management of prolonged labour, obstructed labour, and cord presentation was done. The objectives of the teaching session was that, at the end of the teaching session, participants should be able to:

- i. describe the first-aid management of prolonged labour, obstructed labour, and cord presentation; and
- ii. demonstrate the skills for managing cord presentation before referral.

The researcher welcomed the participants and made them comfortable while the training session addressed highlighted areas in the objectives. The session lasted about one hour and thirty minutes. All questions that were asked were answered and skills managing cord presentation was covered.

Session three (3rd week): Training of participants on first-aid management and skills of cord prolapse, abruption placenta, and postpartum haemorrhage. The objectives of this session were that; at the end of the teaching sessions participants should be able to:

- i. describe the first-aid management of cord prolapse, abruption placenta, and post-partum haemorrhage; and
- ii. demonstrate the skills of managing cord prolapse and post-partum haemorrhage before referral.

A brief recap of the previous session was done. The teaching of first-aid management of cord prolapse, abruption placenta, and post-partum haemorrhage was done. Demonstrations of skills for managing cord prolapse and postpartum haemorrhage were done by the researcher and the research assistants. The session lasted about one hour and forty minutes. All questions that were asked were answered.

Session four (4th week): A review of what was done on the six previously discussed selected emergencies of women in labour, clarifications were made and all questions were answered.

Session five (8th week): Evaluation Session

This session was done two weeks after the last intervention session and this was when post-intervention instruments were administered to determine their knowledge of first-aid management and skills of selected women in labour emergencies.

The researcher wished the participants well in their practices.

The Data obtained were coded and analysed using SPSS statistical software version 21.00 (IBM Corp released 2012 Armonk, NY: IBM Corp). Variables and research questions were analysed using descriptive statistics (percentages and mean). Inferential statistics of Paired T-test was utilized to test the two hypotheses of the study and results were presented in tables.

Results

Table 1: reveal that 111 TBAs participated in the study in which the predominant age of the TBAs was between the ages of 41 to 50 years which represents 44 (39.6%) of the sampled respondents. The majority of sampled respondent 92 (82.9%) of the TBAs are married. The level of education of TBAs shows that most of them 53 (47.7%) had secondary education. Significantly, the majority of the TBAs 104 (93.7%) are Christian by religion. The findings on gender depict that predominantly, 104 (93.7%) of TBAs are female. The years of experience show that the majority 70 (63.1%) had years of experience ranging from 1 to 10 years. The majority 107 (96.4%) claimed they were formally trained.

Table 1: Traditional Birth Attendance Demographic Data (TBAs-DD)

Variables	Category	N	%
Age Range	21-30 years	6	5.4
	31-40 years	40	36.0
	41-50 years	44	39.6
	51 years and above	21	18.9
	Total	111	100.0
Marital Status	Divorced	3	2.7
	Married	92	82.9
	Widowed	16	14.4
Total	111	100.0	
Level of Education	No Formal Education	8	7.2
	Primary Education	40	36.0
	Secondary Education	53	47.7
	Tertiary Education	10	9.0
	Total	111	100.0
Religion	Christianity	104	93.7
	Islam	5	4.5
	Traditionalist	2	1.8
Total	111	100.0	
Gender	Female	104	93.7
	Male	7	6.3
Total	111	100.0	
Year of Experience	1-10 years	70	63.1
	11-20 years	30	27.0

	21-30 years	7	6.3
	30 years and above	4	3.6
	Total	111	100
Formally Trained	No	4	3.6
	Yes	107	96.4
	Total	111	100.0

Table 2: shows that during pre-intervention, 94 (84.7%) TBAs had below-average knowledge on first aid management of selected women in labour emergencies as compared to post-intervention, which stood below-average knowledge on first aid management of 2 (1.8%),

17 (15.3%) having an average knowledge during pre-intervention on first aid management of selected women in labour emergencies as against 34 (30.6%) post-intervention. It should be noted that there was no TBA that scored above-average knowledge on first aid management skills in selected women in labour emergencies during pre-intervention as compared to 75 (67.6%) that had above-average knowledge on first aid management of selected women in labour emergencies. Means scores for pre and post-intervention was calculated to be 6.86 and 17.66 respectively. The mean gain for pre and post-intervention was 10.8

Table 2: Pre and Post-intervention Knowledge of TBAs on First-Aid Management

Knowledge of TBAs on first-aid management of selected Labour emergencies	Category	Pre-intervention scores		Post-intervention scores	
		N	%	N	%
Below average	1-9	94	84.7	2	1.8
Average	10-16	17	15.3	34	30.6
Above average	17-21	0	0	75	67.6
Total		111	100.0	111	100
Mean		6.86		17.66	
Mean gain		10.8			

Table 3: shows that the pre-intervention score below average on the TBAs first aid management skills to be 82 (73.9%), 28 (25.2%) scores typically average while only 1 (0.9%) had above-average first aid management skills but during the post-intervention, 1 (0.9%) had below-average first aid management skills, 24 (21.6%) had average skills on first aid

management and 86 (77.5%) had first aid management skills that was above average. The pre interventions mean score was 4.92, the post-intervention mean score was 11.46 while the mean gain was 6.54.

Table 3: Pre and Post-intervention First-Aid Management Skills of TBAs

First-aid management skills of TBAs	Category	Pre-intervention N (%)	Post intervention N (%)
Below average	0-6	82 (73.9)	1(0.9)
Average	7-10	28 (25.2)	24(21.6)
Above average	11-14	1 (0.9)	86 (77.5)
Total		111(100)	111(100)
Mean		4.92	11.46
Mean gain		6.54	

Table 4, shows that there was a significant difference between pre-intervention scores and post-intervention mean scores on first-aid management of labour emergencies by the TBAs ($t = 46.913, p = 0.00$). Hence, the Null hypothesis which stated that training program have no significant effect on pre- and post-intervention knowledge of TBAs on the identification of selected women in labour emergencies was rejected.

From Table 5: it can be deduced that there was a significant difference between Pre- and Post-Intervention mean scores for skills of TBAs in first-aid management of women in labour emergencies ($t = 39.571, p = 0.000$). Hence, the Null hypothesis which stated that training program have no significant effect on pre- and post-intervention mean scores of skills of TBAs on first-aid management of selected women in labour emergencies was rejected.

Table 4: Pre and Post-Intervention Mean Scores of Knowledge of Tbas on First-Aid Management

Knowledge of TBAs on First Aid Management	Mean	N	SD	SEM	df	T	P-value
Pre-intervention scores	6.86	111	2.47	0.23	110	46.91	0.00
Post-intervention scores	17.66	111	2.37	0.22			

0.05 level of significance

Table 5: Pre and Post-Intervention Mean Scores of Skills of Tbas on First Aid Management

Skills of TBAs on First Aid Management	Mean	N	SD	S.E	df	T	P-value
Pre intervention scores	4.92	111	1.93	.184	110	39.571	0.00
Post intervention scores	11.46	111	1.36	.130			

0.05 level of significance

Discussion of Findings

The study examined effects of training on the knowledge and skills o selected TBAs on first-aid management of selected women in labour emergencies. Training were conducted in sessions, at the end of which sampled respondents were examined through the instrumentality of structured questionnaire to determine their level of competence.

Findings reveal the pre-intervention knowledge of TBAs on first-aid management of some selected women in labour emergencies were poor as majority 94 (84.7%) of the TBAs’ knowledge on first-aid management of sampled women in labour emergencies was below the average of grade 1 – 9 (mean score of 6.86± 2.37), Table 2). There was an improvement in the TBAs post-intervention knowledge as there was no TBA that had below-average knowledge on first-aid managements during pre-intervention as compared to 75 (67.6%) that had above-average knowledge on first-aid managements 17.66 ± 2.37, there was a mean gain of 10.8.

The reason for low knowledge on first-aid management can be linked to the fact that they do not have a periodic update on their knowledge and the increase in the post-intervention knowledge is therefore linked with exposure to the training package. Moreover, the training was carried out using more graphics and demonstrations than tutorials or lecturing. This does not support the findings of Oshonwoh *et.al*, (2014) that reported a higher percentage of the TBAs that participated in their study know their practices. The post-intervention knowledge on first-aid management was improved. This implied that exposure to the training significantly improved their knowledge during post-intervention. However, the outcome of the study validates the findings of Owens (2011) that TBAs lack adequate knowledge in handling obstetrics

emergencies, as maternal mortality is also linked with prompt access to obstetrics emergencies because 15% of women are prone to have obstetrics emergencies cases during labour.

Findings from Table 3 revealed that pre-intervention knowledge of TBAs skills in first-aid management of sampled women in labour emergencies was low, majority 82 (73.9%) scored below average on a grade of 1- 6 (mean score 4.92 ± 1.94) contrasting the post-intervention mean score of 11.46 ± 1.37 with a mean gain of 6.54. The pre-intervention skills were below average because they were not having an update on skills in the management of labour emergencies and their increase in the post-intervention skills is therefore linked to exposure to training which combined demonstration and the use of pictorials in teaching them. This does not support the findings of Oshowoh *et.al*, (2016) that reported no relationship linking the skills of TBAs and their capability to manage or handle delivery problems or difficulties.

There was a significant difference between pre- and post-intervention mean scores (Table 4) on first-aid management of labour emergencies of TBAs ($t = 46.913, p = 0.00$) hence, the stated Null hypothesis was not rejected The reason for differences in the pre- and post-intervention mean scores were because the TBAs, ab-initio, rarely engage in continuous training and refresher program, but as a result of participating in the training session fully, they were able to understand what was taught as a result of the combination of various teaching methods. This result validates the findings of Hernandez *et.al*, (2017), that reported a great increase in the TBAs obstetrical knowledge as compared with the pre-test scores; they were able to identify complications in pregnancy and labour and refer on time and were able to offer basic prenatal care that would not have been rendered before. The outcome of an intervention study also

corroborated with the findings of Pyone *et.al*, (2014) that TBAs were able to identify the danger signs of pregnancy, other complications during pregnancy, during labour and was able to advise the women appropriately after proper training.

It was deduced from Table 5 that there was a significant difference between pre- and post-intervention mean scores for skills of TBAs in first-aid management of women in labour emergencies ($t = 39.571, p = 0.00$). Hence, the stated null hypothesis was hereby rejected. The reason for the significant difference between the pre- and post-intervention skills was linked with the exposure to the training that utilizes demonstration and other teaching aids that facilitate their proper understanding and remembering of the skills required of them to give first-aid management in sampled women in labour emergencies. This was not in support of Oshowoh *et.al*, (2016) study that reported no relationship linking the skills of TBAs and their capability to manage or handle delivery problems or difficulties. However, the outcome of this study was in consonance with the findings of Rodgers (2004) that presented an improved and retained knowledge as well as the outcome of training TBAs in which they were able to identify high-risk pregnancies and manage obstetrical emergencies as there was a marked improvement in referral practice.

Conclusion and Recommendations

The skills in first-aid management of sampled women in labour emergencies was found to be poor prior intervention but was observed to have improved significantly during the post-intervention. This connotes that training the TBAs can help to improve their knowledge on early identification of Labour emergencies and also know what to do to prevent complications during referral as referral is part of the first aid management that is expected of TBAs to do and thus helping to reduce maternal mortality. It is therefore very important to incorporate or organize regular training for TBAs to target early identification of women in labour emergencies or complications and first-aid management during referral.

Based on the findings from this study, the following recommendations are made: the importance of training TBAs by the Health Authorities should be taken seriously as a matter of policy in the quest to reduce maternal mortality to the barest minimum. Hence, regular training together with prompt supervision should be conducted regularly for the TBAs as pregnant women kept patronizing them. Training should not only be limited to identification and referral on recognition of complications but should also be extended to first-aid management to prevent further

complications during a referral to the nearest health facility.

Also, training should be done by trainers in the indigenous language to improve understanding of what is being taught. Further, teaching should not be taught in abstract by trainers but should combine different teaching methods using colourful teaching aids, simulation, and teaching them from simple to complex as this will facilitate their learning and will make them remember and act appropriately on recognition of women in labour emergencies. Similarly, the midwives should create a link with the TBAs and there should be periodic meeting, training, and prompt supervision of their services.

Implication to Nursing Profession

The outcome of this study reveals how training enhances the skills of TBAs towards identification and first-aid management and thus will help policymakers on maternal and child health issues to make healthy decisions affecting the health of mother and child as regards the aspects of TBAs. The State Ministry of Health in conjunction with the Directorate of Nursing Services should train, register, monitor, and supervise TBAs practices toward early identification and first-aid management during a referral to a well-equipped hospital. The findings of this study also revealed that there are lots of deliveries that take place with the TBAs. The nursing profession should work on the training of TBAs and should make hospital environment and services accessible and affordable to improve patronage and make hospital deliveries friendly.

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