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ENHANCING KNOWLEDGE OF TRADITIONAL BIRTH ATTENDANTS FOR THE IDENTIFICATION OF SELECTED LABOR EMERGENCIES

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ABSTRACT: ***Objectives:*** *In Nigeria, the number of professional midwives available for care of pregnant women and their babies is inadequate; hence, most pregnant women are attended to by Traditional Birth Attendants (TBAs). Studies show that TBAs have poor knowledge of how to identify obstetrics complications.* ***Aim:*** *To determine the effectiveness of a training program on enhancing the knowledge of TBAs in the identification of some selected labor emergencies.* ***Materials and Methods****: An experimental research design was conducted with probability sampling to select sample size (n = 111 TBAs). A modified, structured questionnaire from TBAs knowledge on identification of labor emergencies (TBAs-TPKI) was used for data collection. Data collected were analyzed using Statistical Packages for the Social Science (SPSS) software. Descriptive statistics were used to provide answers to the six research questions of the study while inferential statistics of paired t-test was used to test the hypothesis of the study at 0.05 level of significance.* ***Results****: The results show that the mean score on knowledge identification on prolonged labor increased from 4.88±2.54 to 11.56±1.48; obstructed labor from 4.18±2.18 to 5.73±1.26, cord presentation from 2.44 ±1.27 to 5.78 ± 0.74, cord prolapse from 2.79±1.45 to 6.60±0.84, placenta abruptio from3.83±1.99 to 9.08±1.16 and postpartum hemorrhage from 3.48±1.82 to 8.26±1.05. The overall mean score of TBAs on knowledge of identification increased from 21.59 ± 11.26 to 51.19 ± 6.54 post-intervention. There was a significant difference between pre- and post-intervention mean scores of knowledge of TBAs on the identification of all the selected labor emergencies (t = 32.208, p = 0.00).* ***Conclusions:*** *The Ministry of Health in each state should organize regular training for TBAs to target early identification of obstetrics emergencies in order to reduce maternal mortality in Nigeria.*

KEYWORDS: Maternal Mortality, Labor-Emergencies, Education, Traditional Birth Attendants, Pregnant Women.

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INTRODUCTION

Labor emergencies are unpredictable situations that often result in morbidity and mortality of both the mother and the fetus or the baby after delivery [1-3]. Expectant mothers seek obstetrics services based on the availability and accessibility of health facilities, trained personnel for delivery services, and availability of financial resources [4-6]. In Nigeria, expectant mothers patronize both skilled and unskilled personnel for delivery purposes in government-established institutions, that is, hospitals and primary health centers; faith-based institutions, and oftentimes, home settings [7-10]. Most home setting deliveries are charged by Traditional Birth Attendants (TBAs) [11-13]. In low-income urban and rural Nigerian communities, most women deliver at home with delivery services rendered by TBAs [11-12]. Maternal mortality is noted to be prevalent in certain parts of developing countries despite the various adopted measures like the Safe Motherhood Initiative by World Health Organization, aimed at reducing the maternal mortality rate [14].

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. [15-17]. The World Health Organization affirmed that maternal mortality in Nigeria was over 800 maternal deaths per 100,000 live births, with approximately 58,000 maternal deaths occurring in a year [18]. Disparities exist between developed and developing countries, the total number of maternal deaths in forty-six most developed countries was one thousand and seven hundred (1700) with a resultant maternal mortality ratio of 12 maternal deaths per 1000 live births [14, 18]. While the average Nigerian woman has a 1 in 22-lifetime risk of dying during pregnancy, childbirth, or postpartum or post-abortion in comparison with the rate of 1 in 4900 in most developed countries [19-21]. Different factors are responsible for the increase in maternal mortality, ranging from direct and indirect causes, underlying factors such as disproportions between the rich and poor women, rural and urban residents, including poor maternal and child health statistics in Nigeria [22-23]. Likewise, inaccessibility and poor utilization of quality maternal health care services, low literacy level, and the use of TBAs by pregnant women have all been registered as other major factors responsible for the increase in maternal and child mortality rates [11-13].

[24-27] Studies asserted that most pregnant women prefer to deliver at home utilizing TBAs because of poverty and easy accessibility. Therefore, this study aims to determine the effectiveness of a training program on enhancing the knowledge of TBAs in the identification of some selected labor emergencies in Ogbomoso, Oyo State.

Materials and Methods

This is an experimental research design, which was conducted from December 2017 to September 2019 and adopted a pre-test-post-test design, probability sampling was used to select a sample size of 111. The sample size was calculated according to Slovin's formula, n= sample size, population size (N) = 150, and margin of error (e) = 0.05, with confidence level of 95%. The study was conducted in Ogbomoso, Oyo State, Nigeria. The Inclusion criteria were all TBAs that are practicing and consented to take part in the study and confirm with their registration card. The exclusion criterium was that TBAs who were not medically fit to take part in the study were excluded.

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The instrument used to collect data is a test paper on knowledge of identification of some selected labor emergencies (prolonged labor, obstructed labor, cord presentation, cord prolapse, placenta abruption, and post-partum hemorrhage (TP-KIFM). The instrument consists of a total number of 82 questions. Section A contains questions on TBAs' knowledge on the identification of selected emergencies in labor and it comprises 62 questions while section B consists of questions on TBAs' knowledge on first-aid management of selected obstetric emergencies. This section consists of 21 questions. The maximum score for correct response for knowledge on identification of selected labor emergencies was 62 points. The scores were categorized into three: Scores between 1 and 30 were considered as below average, scores between 31 and 47 were considered as average knowledge while scores between 48 and 62 were considered to be above average knowledge. The maximum score for a correct response for knowledge on first-aid management of selected labor emergencies was 21 points. The scores were categorized into three: scores between 1 and 9 were considered as below average, scores between 10 and16 were considered as average knowledge, and scores between 17 and 21 were considered to be above average knowledge. These instruments were subjected to correction by experts in the field. 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, which indicate high reliability of the instrument.

Data collection was in three major sessions which include: 1. A pre-intervention visit session: the association of TBAs and their members was met for familiarization and good rapport was established.

2. Intervention Session: The participants were exposed to a teaching module on enhancing the training package of TBAs in the identification of selected labor emergencies.

3. Evaluation session: Post-intervention instruments were administered to determine their knowledge identification of selected labor emergencies.

Data obtained were coded and analyzed using the statistical software (IBM Corp. released 2012.IBM SPSS statistics for windows, version 21Armonk, NY: IBM Corp). Variables and research questions were analyzed using descriptive and t-test statistics.

Ethical Consideration

Ethical approval for this study was obtained from the institutional ethical committee with reference BUHREC 633/17 on July 15^{th,} 2018, Babcock University. 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.

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RESULTS

Table 1 shows that during the pretest, the majority 83(74.8 %) of TBAs had below-average knowledge on identification of prolonged labor, and only 8 (7.2 %) TBAs had an above-average knowledge on identification of prolonged labor but during the post-test, Majority 105 (94.6 %) of TBAs had an above-average knowledge on identification. The pre-intervention means score was calculated to be 4.8761 while the post-intervention means the score was calculated to be 11.5585 and the mean gain was found to be 6.6824.

Table 2 shows that during pre-intervention, only 8 (7.2 %) TBAs had an above-average knowledge on the identification of obstructed labor. Majority 83 (74.8 %) had a below-average knowledge with a pre-intervention mean score of 4.1786 but post-intervention, it was observed that only 2 (1.8 %) TBAs that had below-average knowledge while most of them 88 (79.3 %) had an above-average knowledge on identification of obstructed labor. The post-intervention mean score also increased to 9.9051 while the mean gain was calculated to be 5.7265.

Table 3 shows that during the pre-test, there were no TBAs that had an above-average knowledge on identification of Cord Presentation, 13 (11.7 %) TBAs had an average knowledge while 98 (88.3 %) of TBAs had below-average knowledge, but, during the post-intervention test, 71 (64%) TBAs had an average knowledge while 38 (34.2 %) TBAs had an above-average knowledge on cord Presentation as against 2(1.8 %) during the pre-intervention test. The pre-intervention means scores were 2.4380 as compared against the post-intervention means scores of 5.7793 while the mean gain was found to be 3.3413**.**

Table 4 also shows that during the pre-test, majority 83(74.8 %) of TBAs had below-average knowledge on the identification of Cord Prolapse while only 8 (7.2 %) had an above-average knowledge. During the Post-test, 88 (79.3 %) TBAs had above-average knowledge as compared with 8 (7.2 %) TBAs that had above-average knowledge during the pre-test. The pre-intervention mean score was 2.785 while the post-intervention mean score was 6.6034. The mean gain was calculated to be 3.2483.

Table 5 shows that during the pre-intervention 92 (82.9%) had below-average knowledge on identification of Abruptio Placentae and only 1 (0.9 %) TBAs had above-average knowledge, but during the post-intervention, it was only 2 (1.8 %) TBAs that had below-average knowledge while 64 (57.7 %) TBAs had average knowledge and 45 (40.5 %) TBAs had above average knowledge on identification of Abruptio Placentae and compared with just only 1 (0.9 %) TBAs that had an above average knowledge during pre-intervention. The pre-intervention mean score was found to be 3.8309 while post-intervention mean scores were calculated to be 9, 0810, therefore the mean gain was 5.2501.

Table 6 reveals that during pre-intervention, it was only 8 (7.2%) TBAs that has above average knowledge on identification of Post-partum Hemorrhage as compared with 105 (94.6 %) TBAs that had an above average knowledge during the post-intervention. The Pre-intervention means score was 3.4832 while the Post-intervention mean score was 8.2568, the mean gain was 4.7736.

Table 7 revealed a significant difference between pre and the post-intervention mean scores of knowledge of TBAs on identification of the six selected labour emergencies (t = 32.208,

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p = 0.00). Hence, the alternate hypothesis which stated that there is a significant difference between pre and post intervention mean scores of knowledge of TBAs on identification of selected labour emergencies was accepted.

DISCUSSION

The study shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of prolonged labor. These findings established the report of Kestler et al in 2013 that reported TBAs lacking the expertise to identify and manage obstetrics emergencies which lead to poor obstetrics outcomes and an increase in the rate of maternal mortality in our communities and nation as a whole [36]. The outcome of this study also corroborated with other studies that confirmed an improved outcome after the training as TBAs were able to easily recognize the risky cases and begin to develop the reflex and evacuation of risky cases [37-39]. The reason for the significant difference in the pre and post-intervention mean score can be linked with the fact that they seldom go for training, but as a result of exposure to the training which combines various teaching methods, they were able to understand and attempt the test paper with more understanding than the pretest. This further confirmed the previous findings of Turinawe *et.al*, 2016 that reported an improvement in knowledge of TBAs and greater confidence in the practice of TBAs after the training and they were able to identify the danger signs of pregnancy, other complications during pregnancy, and labor. They were also able to advise the women on when and where to seek help [40].

In addition, this study shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of obstructed was accepted. This shows there was an improvement in their knowledge on the identification of obstructed labor post-intervention as compared with their pre-intervention knowledge. This improved post-intervention knowledge can be linked to exposure to training and the effectiveness of the teaching method. The outcome of this study, however, disagrees with the findings of Oshonwoh *et.al*. in 2014 opined that a higher percentage of the TBAs that participated in their research have knowledge about their practices. As a result of exposure to the training which combines various teaching methods, they were able to understand and attempt the test paper with more understanding than the pretest [41] The findings also concur with the findings of Hernandez et al. in 2017 said that there was a great increase in the TBAs obstetrical knowledge as compared with the pretest scores; they were able to identify complications in pregnancy and labor after training [42].

Moreover, this study shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of cord presentation was accepted. This shows improved post-intervention knowledge on the identification of cord presentation which occurs as a result of the training and combination of different teaching methods that were adopted in training them. This confirmed the findings of Pyone *et.al*. in 2014 said that there was an improvement in the knowledge of TBAs and greater confidence in their practice after the training and were able to identify the danger signs of pregnancy. Other complications during pregnancy and labor and were able to advise the women on when and where to seek help.[43] The findings of this study were also similar to other studies that

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reported an improved outcome after the training as TBAs were able to easily recognize the risky cases and began to develop the reflex and evacuation of risky cases [37-39].

Furthermore, this study shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of cord prolapse was accepted. These findings and post-intervention knowledge on the identification of cord prolapse can also be linked to the training that was given to the TBAs. It also supports the findings that reported a great increase in the TBAs' obstetrical knowledge as compared with the pretest scores; they were able to identify complications in pregnancy and labor and refer on time and were able to offer basic prenatal care that would not have been rendered before [42]. This connotes that training TBAs can help to improve their knowledge in the early identification of obstetrics emergencies. This supports the findings of Abiodun et al in 2015 opined that educating TBAs and incorporating them into an enhanced health care system is practicable and efficient in reducing perinatal mortality [44].

This study also shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of Abruption Placentae was accepted. This can be linked to the effectiveness of the training they were exposed to. The outcome of this study also corroborated Sanogo and Giani (2014) who confirmed an improved outcome after the training as TBAs were able to easily recognize the risky cases and begin to develop the reflex and evacuation of risky cases, which implies that exposing TBAs to training can help them to know how to recognize emergencies on time [45]. This also goes in tandem with the findings of Rodgers (2004) that reported an improved and retained knowledge as well as a marked improvement in referral practices when compared with the control group in his research on the outcome of training TBAs in which they demonstrated uneven but persistent achievement of curricular training goals relating to the identification of high-risk pregnancies and management of obstetrical emergencies [46].

Moreover, this study shows that there is a significant difference between pre and post-intervention mean scores of knowledge of TBAs on the identification of Postpartum hemorrhage was accepted. This also shows that the impact of training cannot be overemphasized with the TBAs if we are to curb the menace of maternal mortality as pregnant women keep patronizing them. This finding also supports the findings of Hernandez *et.al*. in 2017 that reported a great increase in the TBAs obstetrical knowledge as compared with the pretest scores; they were able to identify complications in pregnancy and labor and refer on time and were able to offer basic prenatal care that would not have been rendered [42].

Finally, some limitations were encountered in the course of the study, despite the objective being met. It was difficult to get the consent and confidence of the participants because they believed that any information given will be used against them by the government. Hence, the researchers took extra time and patience with the participants to educate them on the importance of the study.

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CONCLUSION

The knowledge of TBAs on the identification of selected labor emergencies was found to be poor before the intervention but was noted to increase significantly during the post-intervention. This connotes that training the TBAs can help to improve their knowledge on early identification of labor emergencies for them to be able to place referrals on time to prevent the delays that may lead to maternal mortality. It is therefore very important to incorporate or organize regular training for TBAs to target early identification of labor emergencies that will lead to early referral. Based on the findings from this study, we recommend: The importance of training TBAs by the Ministry of Health should not be underrated in the quest to reduce maternal mortality to the minimum; hence, regular training together with prompt supervision should be done by each state in training the TBAs as pregnant women keep patronizing them. Secondly, training should not only be limited to the identification and referral on recognition of complications, but it should also be extended to first-aid management to prevent further complications during a referral to the nearest health facility. Finally, training should also be done by trainers in the indigenous language to improve understanding of what is being taught.

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APPENDIX

Table 1: Pre and post-intervention mean scores of knowledge of TBAs on the identification of prolonged labor

Knowledge of TBAs on the identification of Prolonged labor	Category of scores	Pre-intervention		Post intervention	
		F	%	F	%
Below average	1 – 6	83	74.8	2	1.8
Average	7 -10	20	18.0	4	3.6
Above average	11 – 14	8	7.2	105	94.6
Total		111	100.0	111	100
Mean		4.8761		11.5585	
Mean gain	6.6824				

Table2: Pre and post-intervention mean scores of knowledge of TBAs on the identification of obstructed labor.

Knowledge of TBAs on the identification of obstructed labor	Category of scores	Pre-intervention		Post intervention	
		F	%	F	%
Below average	1 – 5	83	74.8	2	1.8
Average	6 – 8	20	18.0	21	18.9
Above average	9 – 12	8	7.2	88	79.3
Total		111	100.0	111	100
Mean		4.1786		9.9051	
	5.7265				

Table 3: Pre and post-intervention mean scores of knowledge of TBAs on the identification of cord presentation.

Knowledge of TBAs on the identification of Cord Presentation	Category of scores	Pre-intervention		Post intervention	
		F	%	F	%
Below average	1 – 3	98	88.3	2	1.8
Average	3.5 – 5	13	11.7	71	64
Above average	6 – 7	0	0	38	34.2
Total		111	100.0	111	100
Mean		2.4380		5.7793	
Mean gain	3.3413				

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Table4: Pre and post-intervention mean scores of knowledge of TBAs on the identification of cord prolapse.

Knowledge of TBAs on the identification of Cord prolapse	Category of scores	Pre-intervention		Post-intervention	
		F	%	F	%
Below average	1 – 3	83	74.8	2	1.8
Average	4 – 5	20	18.0	21	18.9
Above average	6 – 8	8	7.2	88	79.3
Total		111	100.0	111	100
Mean		2.7857		6.6034	
Mean gain	3.2483				

Table 5: Pre and post-intervention mean scores of knowledge of TBAs on the identification of abruptio placentae.

Knowledge of TBAs on the identification of Abruptio Placentae	Category of scores	Pre-intervention		Post-intervention	
		F	%	F	%
Below average	1 – 5	92	82.9	2	1.8
Average	6 – 8	18	16.2	64	57.7
Above average	9 – 11	1	0.9	45	40.5
Total		111	100.0	111	100
Mean		3.8309		9.0810	
Mean gain	5.2501				

Table 6: Pre- and post-intervention mean scores of knowledge of TBAs on the identification of postpartum hemorrhage

Knowledge of TBAs on the identification of Postpartum hemorrhage	Category of scores	Pre-intervention		Post-intervention	
		F	%	F	%
Below average	1 – 4	83	74.8	2	1.8
Average	5 – 6	20	18.0	4	3.6
Above average	7 – 10	8	7.2	105	94.6
Total		111	100.0	111	100
Mean		3.4832		8.2568	
Mean gain	4.7736				

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Table 7: Paired t-test to compare pre and post intervention mean scores of knowledge of TBAs on identification of selected labour emergencies.

Knowledge of TBAs on identification of selected obstetrics emergencies in labour.	**Mean**	**N**	**Standard Deviation**	**Std. error mean**	**df**	***t***	***p* value**
Pre intervention scores	21.59	111	11.260	1.069	110	32.208	0.00
Post-intervention scores	51.19	111	6.537	.620			

0.05 level of significance

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