



## Awareness of Causes and Preventive Measures of Neonatal Tetanus among Childbearing Mothers in Isiala Ngwa South Local Government Area, Abia State

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### Abstract

*Neonatal tetanus remains an important public health problem in many parts of the world especially in the low income countries. This study investigated awareness of causes and preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State. Four research questions and two null hypotheses guided the study. The study adopted a cross-sectional survey research design. The population for the study consisted of 7,000 CBMs in Isiala Ngwa South LGA, Abia State. A validated questionnaire titled "Awareness of causes and Preventive Measures of Neonatal Tetanus Questionnaire (ACPMNNTQ)" was used as instrument for data collection. Descriptive statistics of frequencies, percentages and chi-squared test were used for data analysis. Results showed that childbearing mothers possessed average awareness of causes (52.6%) and preventive measures (56.7%) of neonatal tetanus. The childbearing mothers with primary education possessed very low awareness (26.9%) and low awareness (30.7%) on causes and preventive measure of neonatal tetanus, those with secondary education possessed high awareness (60.5% and very high awareness (83.1%) while those with tertiary education possessed average awareness (55.0%) and high awareness (77.3%) on outcome variables. Furthermore, the results revealed that there were significant differences in the awareness of causes and preventive measures of neonatal tetanus among childbearing mothers based on level of education. The author recommended among others that health care workers should routinely assess tetanus toxoid status of all female patients of a reproductive age and vaccinate them according to Ministry of Health Vaccination guidelines.*

**Keywords:** Awareness, Neonatal tetanus, Preventive measures, Childbearing mothers

### Introduction

Neonatal tetanus (NNT) is an acute infectious disease that is the leading cause of morbidity and mortality among children within the first 28 days of life both in the developed and developing countries. It is an important public health problem in many parts of the world, especially in the low-income countries where immunization coverage is low and unclean birth



practices are common (World Health Organization [WHO], 2018). WHO (2005) reported that an estimated eight (8) million neonates die within the first 28 days of life every year. WHO (2018) reported that in 2017, globally 2.5million children died in the first month of life, almost 7,000 new born deaths occur everyday with one million dying on the first day of life, while nearly one million died within six days of life. Abdullahi, Mohammed, Mariem, Nessiba, Fatimatou, Abdi, Saad, Khatri, Jorg, & Amina (2019) reported that neonatal death accounts for about 44 percent of deaths among children less than 5years worldwide of these, 99% occurred in developing countries with the highest rates in Sub-Saharan Africa. Also, tetanus accounts for seven per cent of neonatal deaths globally. Nigeria has a high burden of neonatal deaths. Out of the five million babies born every year, 240,000 die within the first four weeks of life, with tetanus accounting for up to twenty per cent of such deaths.

Neonatal tetanus refers to tetanus that occurs among new borns within the first four weeks of life. The WHO (2018) described NNT as an illness occurring in an infant who has the normal ability to suck and cry in the first 2 days of life, but who loses this ability between days 3 and 28 days of life and become rigid and spasm.

Neonatal period is the first 28 days of life. This is a vulnerable time for a child's survival (Olaniyi & Ncana, 2019). Neonatal tetanus can be conceptualized as tetanus that affects babies within the first 28 days of life. Tetanus is a deadly disease that attacks the nerve and muscles of the body. It starts off as a skin wound contaminated by bacterium that is commonly found on the ground.

Tetanus is caused by the toxin produced by the Gram-positive bacillus *C tetani*, which is obligate anaerobe. The spores of *C tetani* are mainly found in human and animal faeces, soil and manure and by contrast are highly resistant and can tolerate an extreme temperature, and common disinfectants. Symptoms of neonatal tetanus include rigidity of muscles with spasms, irritability (continuous crying), grimacing of face and restlessness, poor feeding/sucking ability (Azubuike & Nkanginieme, 2009; WHO, 2018). The spasm at first may be frequent, but later increases, and are often precipitated by any stimulus such as noise and cold. Azubuike and Nkanginieme (2019) pointed out that the spasm may be spontaneous or provocative and may last from a few seconds to over a minute. Dysphasia (difficulty swallowing) may be experienced due to spasms of the larynx, and tight abdominal muscles are experienced in variable degrees resulting in constipation. There is no muscle rupture or spine breaking and consciousness is intact despite these problems. This intact in consciousness may present a condition that is deceptive and unsuspecting. This, however is very risky and misleading and could lead to sudden and unexpected death (Webber, 2006).

Risk factors associated with neonatal tetanus include unvaccinated pregnant mother, unhygienic conditions during childbirth, animals (such as life stock kept near the vicinity of home), use of traditional methods of umbilical cord management (e.g. ash, unclean hands and unsterilized instruments), newborn exposure to raw soil/dusts, lack of awareness of symptoms, lack of primary health care as well as traditional practices like circumcision (Sheba, Wabwire-Mange, & Kitimbo, 2006). In the past neonatal tetanus was overlooked by the health services of many developing countries but recently, the extent and magnitude of the disease were found to be very serious health challenge in developing countries. Oranabo (2007) submitted that complete eradication of NNT is not possible because the spores can survive for a long time outside the human body, in the dirt and in the stool of infected people or animal. However, implementation of adequate preventive measure will help to control the disease.



Prevention means to ward off an event before it occurs. It is the planning for and taking action to forestall the onset of a disease or other problems before the occurrence of undesirable health events (Mckenzie, Pinger, & Kotecki, 2008). Salama (2011) described prevention as actions aimed at eradicating, eliminating or minimizing the impact of a disease or disorder. The goal of prevention is to reduce risk factors and enhance protective factor (Doyle, 2006). Preventive measures in other words refer to interventions directed to avert the emergence of specific diseases or conditions, thereby reducing their incidence and prevalence in a given population. Preventive measures according to Starfield et al. (2007) refer to all measures that limit the progression of a disease or condition at any stage of its course. Preventive measures can be achieved through modification or removal of risk factors for disease or any health condition. Contextually, preventive measures refer to measures directed to avert the occurrence of neonatal disease in children under 28days. Awareness of causes of neonatal tetanus will enable childbearing mothers adopt measures that will help in its prevention.

Awareness refers to the ability to directly know, perceive events, objects, thought or sensory patterns. Mohammed et al. (2015) opined that awareness is defined as a human and animal's perception and cognitive reaction to a condition or an event. Awareness is conceptualized in this study as the ability of childbearing mothers to perceive the causes and preventive measures of neonatal diseases. Babies less than one month who are born at Isiala-Ngwa South LGA are a high risk of developing neonatal tetanus because most pregnant mothers from the area deliver through traditional birth attendants, who probably may be using traditional methods of umbilical cord management such as unsterilized instruments and unclean hands. Thus, childbearing mothers in this area may have poor awareness of the causes and preventive measures of neonatal tetanus; this necessitates this study.

### **Research Questions**

Four research questions were formulated to guide the study:

1. What is the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State?
2. What is the awareness of preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State?
3. What is the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education?
4. What is the awareness of preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education?

### **Hypotheses**

Two null hypotheses were postulated to guide the study, and were tested at .05 alpha level.

1. There is no significant difference in the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education.
2. There is no significant difference in the awareness of preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education.



## Methods

**Research Design:** The study adopted the cross-sectional survey research design. Cross-sectional research design is an observational research that analyzes data of variables collected at one given point in time across a sample population.

**Area of the Study:** The study was conducted in Isiala Ngwa South LGA which is one of the local government area in Abia State. The local government area is made up of 11 autonomous communities namely, Ovu-Ngwa, Osokwa, Nvosi, Isiala-Nvosi, Ovuokwu, Omoba, Okporo-Ahaba, Mbutu, Amaise-Ahaba, Ngwa and Amanse. The researchers observed that pregnant mothers in these communities deliver mainly under traditional birth attendants. Also, babies within one month of age die in their numbers, which probably might be caused by neonatal tetanus. There is also high mortality rate of infants within the first four weeks of birth. Thus, the researchers deemed the area appropriate for the study.

**Population for the Study:** The population for the study comprised mothers, who registered for maternal and child health care services in both government and private maternity centres in all the eleven autonomous communities in Isiala Ngwa South LGA estimated at 7,000 (Isiala Ngwa Local Government Population Unit, 2020).

**Sample for the Study:** The sample for the study consisted of 420 childbearing mothers living who registered for maternal and child health care services in Isiala Ngwa South LGA. The sample was selected by the aid of Cohen, Manion, and Morrison (2011) standardized table for sample size that when a population is 5,000 or above at 95% confidence levels (5% intervals), the sample size should be 357 or above. A two stage sampling procedure was adopted to draw the sample size for the study. In the first stage, six out of the 11 autonomous communities in Isiala Ngwa South LGA were drawn using simple random sampling techniques of balloting without replacement. In the second stage purposive sampling technique was used to select 70 mothers who could give accurate information needed in the study from each of the six selected autonomous communities. This gave a total of 420 childbearing mothers selected for the study.

**Instrument for Data Collection:** A researcher-designed Awareness of Causes and Preventive Measures of Neonatal Tetanus Questionnaire (ACPMNNTQ) was used for data collection. The ACPMNNTQ consisted of three sections; A, B and C. Section A consisted of one item on the respondents' variable of level of education. Section B consisted of 10 items on causes of Neonatal Tetanus while Section C consisted of six items on preventive measures of Neonatal Tetanus. Three experts from the Department of Health Education, Alvan Ikoku Federal College of Education, Owerri validated the instrument. The experts' suggestions were used in producing the final draft of the questionnaire. Test re-test method was used to determine the reliability of the instrument. Twenty copies of the questionnaire ACPMNNTQ were administered to childbearing mothers attending Health facilities in Isiala Ngwa LGA because they share the same characteristics. After two weeks, the same but fresh copies of the questionnaire were re-administered to the mothers. The two results were correlated using Spearman Brown Order Correlation Coefficient formula. A reliable index of .67 was obtained and adjudged reliable for the study.

**Method of Data Collection:** Four hundred and twenty (420) copies of the questionnaire were administered to 420 childbearing mothers were used for data analysis.

**Method of Data Analysis:** Data generated were analyzed using frequencies, percentages and Chi-squared test. The research questions were answered using percentages while the null hypotheses were tested using chi-squared test ( $\chi^2$ ) at 0.05 level of significance. To determining level of awareness, Okafor (1997) criteria were adopted. By these a score below 20 per cent was



interpreted very low awareness (VLA), a score 21-39 per cent was interpreted low awareness (LA), a score of 40-59 per cent was interpreted average awareness (AA), a score 60-80 per cent was interpreted high awareness (HA) and a score above 80 percent was interpreted very high awareness (VHA).

Key to interpretation: Below 20% = very Low Awareness (VLA), 20-39% = Low Awareness (LA), 40-59% = Average Awareness, 60-80% = High Awareness and 81% and above = Very High Awareness (VHA).

## Results

**Table 1: Childbearing Mothers' Awareness of Causes of Neonatal Tetanus (n = 420)**

S/N	Items on Causes of Neonatal Tetanus	Awareness Responses	
		Yes	No
1.	Lack of maternal tetanus toxoid immunization can expose the baby to neonatal tetanus.	312(74.3)	108(25.7)
2.	Delivery in unhygienic environment can predispose the baby to neonatal tetanus.	246(58.6)	174(41.4)
3.	Insect bite can cause neonatal tetanus.	135(32.1)	285(67.9)
4.	Using unsterilized instrument when cutting the umbilical cord can expose the baby to neonatal tetanus.	165(39.3)	255(60.7)
5.	Circumcision can predispose babies to neonatal tetanus.	100(23.8)	320(76.2)
6.	Wound from rusted objects is one of the cause of neonatal tetanus.	229(54.5)	191(45.5)
7.	Wound from hot objects such as hot water can cause neonatal tetanus.	62(14.8)	358(85.2)
8.	Unhygienic surgical procedure can expose babies to neonatal tetanus.	233(55.5)	187(44.5)
9.	Use of non-sterilized needle during delivery can cause neonatal tetanus.	252(60.0)	168(40.0)
10.	Wound from surgical operation wound can cause neonatal tetanus.	117(27.9)	303(72.1)
<b>Overall Percentage</b>		<b>52.6</b>	<b>47.4</b>

### Key for interpretation:

Below 20% = Very Low Awareness (VLA), 20-39% = Low Awareness (LA), 40-59% = Average Awareness (AA), 60-80% = High Awareness and 81% and above = Very High Awareness (VHA).



Result in Table 1 showed that overall, CBMs had average awareness of causes of NNT (52.6%). This implies that childbearing mothers possessed average awareness about lack of maternal TT immunization, delivery in unhygienic environment, insect bite, using unsterilized instrument when cutting the umbilical cord, circumcision, wounds from rusted objects, wounds from hot objects, unhygienic surgical procedure, use of unsterilized needle and wounds from surgical operation are causes of neonatal tetanus in Isiala Ngwa South LGA.

**Table 2: Childbearing Mothers' Awareness of Preventive Measures of Neonatal Tetanus (n = 420)**

S/N	Items on Preventive Measures of Neonatal Tetanus	Awareness Responses	
		Yes	No
1.	Public awareness enlightenment campaigns on tetanus can help prevent neonatal tetanus.	316(75.2)	104(24.8)
2.	Immunization of both mother and baby can help prevent neonatal tetanus.	238(56.7)	182(43.3)
3.	Proper care of wounds can help to prevent neonatal tetanus.	238(56.7)	182(43.3)
4.	Delivery under skilled birth attendant can help prevent neonatal tetanus.	152(36.2)	266(63.8)
5.	Clean delivery practice can help prevent neonatal tetanus.	289(68.8)	131(31.2)
6.	Proper care of the umbilical cord can help prevent neonatal tetanus.	238(56.7)	182(43.3)
<b>Overall Percentage</b>		<b>56.7</b>	<b>43.3</b>

Result in Table 2 showed that overall percentage of childbearing mothers' awareness of preventive measures of neonatal tetanus was 56.7 per cent. This implies that childbearing mothers in Isiala Ngwa South LGA possessed average awareness that public awareness enlightenment campaign on tetanus, immunization of both mother and baby, proper care of wounds, delivery under skilled birth attendants, clean delivery practice and proper care of umbilical care are preventive measures of neonatal tetanus.



**Table 3: Childbearing Mothers' Awareness of Causes of Neonatal Tetanus Based on Level of Education (n = 420)**

S/N	Items on Causes of Neonatal Tetanus	Awareness Responses		
		Primary Education n = 189 f(%)	Secondary Education n = 159 f(%)	Tertiary Education n = 72 f(%)
1.	Lack of maternal TT immunization can expose the baby to neonatal tetanus.	105(55.0)	144(96.6)	64(88.9)
2.	Delivery in unhygienic environment can predispose the baby to neonatal tetanus.	50(26.5)	134(84.3)	62(86.1)
3.	Insect bite can cause neonatal tetanus.	22(11.6)	104(65.4)	9(12.5)
4.	Using unsterilized instrument when cutting the umbilical cord can expose the baby to neonatal tetanus.	34(18.6)	114(71.7)	17(23.6)
5.	Circumcision can predispose babies to neonatal tetanus.	51(27.8)	28(17.6)	21(29.2)
6.	Wound from rusted objects is one of the causes of neonatal tetanus.	42(22.2)	131(82.4)	56(77.8)
7.	Wound from hot objects such as hot water can cause neonatal tetanus.	34(18.8)	15(9.4)	13(18.1)
8.	Unhygienic surgical procedure can expose babies to neonatal tetanus.	41(21.7)	131(82.4)	61(84.7)
9.	Use of non-sterilized needle during delivery can cause neonatal tetanus.	64(33.9)	132(83.0)	159(10.0)
10.	Wounds from surgical operation can cause neonatal tetanus.	67(35.4)	29(18.2)	21(29.2)
<b>Overall Percentage</b>		<b>26.9</b>	<b>60.5</b>	<b>55.0</b>

Result in Table 3 showed that overall percentage affirmed that childbearing mothers with primary education possessed low awareness (26.9%) of the causes of Neonatal Tetanus, those with secondary education possessed high awareness (60.5%) while those with tertiary education possessed average awareness (55.0%) on the same issue.



**Table 4: Childbearing Mothers' Awareness of Preventive Measures of Neonatal Tetanus Based on Level of Education (n = 420)**

S/N	Items on Preventive Measures of Neonatal Tetanus	Awareness Responses		
		Primary Education n = 189 f(%)	Secondary Education n = 159 f(%)	Tertiary Education n = 72 f(%)
1.	Public awareness enlightenment campaigns on tetanus can help prevent neonatal tetanus.	96(50.8)	149(93.7)	71(98.6)
2.	Immunization of both mother and baby can help prevent neonatal tetanus.	49(25.9)	128(80.5)	61(81.7)
3.	Proper care of wounds can help to prevent neonatal tetanus.	49(25.9)	130(81.8)	59(91.9)
4.	Delivery under skilled birth attendant can help prevent neonatal tetanus.	29(15.3)	113(71.1)	10(13.9)
5.	Clean delivery practice can help prevent neonatal tetanus.	78(41.3)	143(89.9)	68(94.4)
6.	Proper care of the umbilical cord can help prevent neonatal tetanus.	48(25.4)	130(81.8)	60(83.3)
<b>Overall Percentage</b>		<b>30.7</b>	<b>83.1</b>	<b>77.3</b>

Result in Table 4 showed that overall percentage affirmed that childbearing mothers with primary education possessed low awareness (30.7%) of preventive measures of neonatal tetanus, those with secondary education possessed very high awareness (83.1%) while those with tertiary education possessed high awareness (77.3%) on the same issue.

**Table 5: Chi-square Test of Awareness of Causes of Neonatal Tetanus among Childbearing Mothers Based on Level of Education (n = 420)**

Variable	N	Awareness Responses			$\chi^2$	df	p-value
		Yes O(E)	No O(E)				
Primary Education	189	26(99.5)	163(89.6)				
Secondary Education	159	133(83.6)	26(75.3)	208.288	2	.000	
Tertiary Education	72	62(37.9)	10(30.1)				





Results in Table 5 showed the chi-squared test values for the hypothesis of no significant difference in the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education ( $\chi^2 = 208.288$ ,  $df = 2$ ,  $p = .000$ ). Since the p-value was less than .05 level of significance at 2 degree of freedom, the hypothesis was therefore rejected. This implies that significant difference existed in the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education.

**Table 6: Chi-square Test of Awareness of Preventive Measures of Neonatal Tetanus among Childbearing Mothers Based on Level of Education (n = 420)**

Variable	N	Awareness Responses		$\chi^2$	df	p-value
		Yes O(E)	No O(E)			
Primary Education	189	37(107.1)	152(81.9)	192.737	2	.000
Secondary Education	159	140(90.1)	19(68.9)			
Tertiary Education	72	61(40.5)	11(32.1)			

Results in table 6 showed the chi-square value for the hypothesis of no significant difference in the awareness of preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education ( $\chi^2 = 192.737$ ,  $df = 2$ ,  $p = .000$ ). Since the p-value was less than .05 level of significance at 2 degree of freedom, the hypothesis was therefore rejected. This implies that significant difference existed in the awareness of causes of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education.

### Discussion

The findings in Table 1 showed that childbearing mothers in Isiala Ngwa South LGA of Abia State possessed average awareness (52.6%) of causes of neonatal tetanus. The causes include lack of maternal tetanus toxoid immunization, delivery under unhygienic environment, insect bite, using unsterilized instrument when cutting the umbilical cord, circumcision, wound from rusted objects, wound from hot objects such as hot water, unhygienic surgical procedure, use of non-sterilized needle and wounds from surgical operation. The findings were expected and therefore not surprising because studies have shown that the aforementioned are causes of neonatal tetanus.



The findings were in line with the findings of Gitta, Wabwire-Mangen, Kitimbo, and Pariyo (2006) who reported that worldwide neonatal tetanus is associated with unhygienic delivery cord care practices and lack of maternal tetanus toxoid immunization. The findings agree with the finding of Mgba (2008) who reported that the risk factors to neonatal tetanus include deliveries carried out by people with unclean hands or on a contaminated surface and inadequate immunization of the mothers. The findings are also in line with the findings of World Health Organization (WHO) (2018) who reported that neonatal disease occurs when unsterilized instruments are used to cut the umbilical cord or when contaminated material is used to cover the umbilical cord. The findings agree with the findings of WHO (2005) who reported that an estimated eight million neonates die within the first 28 days of life every year.

The findings in table 2 showed that childbearing mothers in Isiala Ngwa South LGA of Abia State possess average awareness (56.7%) of preventive measures of neonatal tetanus. The preventive measures include public awareness enlightenment campaign on tetanus, immunization of both mother and baby, proper care of wounds, delivery under skilled birth attendants, clean delivery practices and proper care of umbilical cord. The findings were not surprising and therefore expected because studies have shown that the measures identified above are preventive measures to neonatal tetanus. The findings were in line with the assertion of WHO (2018) who reported that neonatal tetanus can be prevented by immunizing women of reproductive age with tetanus toxoid containing vaccines, either during pregnancy or outside of pregnancy. The association added that robust medical practices such as clean delivery and cord care during childbirth as well as proper wound care in surgical and dental procedures can also help to prevent the disease. The findings agree with the assertions of Bhutta, Darmstadt, Hasah, and Haws (2012) who reported that clean birth practices including hand washing before, during and after delivery decrease the rate of infections in newborns both at homes and facility settings. The authors explained further that an important strategy for promoting infection-related newborn deaths is to ensure optimal cord care immediately after birth and throughout the first week of life as clean, dry cord is highly important in infant care. The findings agree with the assertion of Healthy New Borne Network (2013) who explained that hygienic umbilical cord care helps in preventing infection through the use of sterile instrument to cut the cord at birth, cleaning with methylated spirit and applying chlorhexidine to the stump. The findings are also in line with the findings of Adegbenro Olowookere, Fehintola, et al. (2019) who reported that increasing the immunization coverage of women of childbearing age especially pregnant women, and improving maternity care with particular emphasis on increasing the proportion of delivery, and delivery being attended by skilled personnel are the best ways to prevent Neonatal Tetanus. The findings agree with the findings of Liu, Johnson, and Cousens (2012) who reported that globally, an estimated 717,000 newborns die as result of severe infection and this account for approximately one third of the total burden of newborn deaths.

The findings in table 3 showed that childbearing mothers with primary education possessed low awareness (26.9%) of causes of neonatal tetanus, those with secondary education possessed high awareness (60.5%) while those with tertiary education possessed average awareness (55.0%) on the same issue. The findings in table 5 showed that there was significant difference in the awareness of causes of neonatal tetanus among childbearing in Isiala Ngwa South LGA of Abia State based on level of education.

The finding was expected and therefore not surprising because several studies have shown that education is associated with awareness. The higher the education of mother the higher it is expected of her to have better or more knowledge about the causes of neonatal



tetanus. The finding agrees with the finding of Mohammed, Abdulrahiman, Amro *et al.* (2015) who reported that level of education of participants was strongly associated with their level of awareness of tetanus. As the level of education increases the awareness level also increases. The finding was in line with the finding of Liu, Li, Jin *et al.* (2013) who reported that people with higher educational level were more aware of the studied diseases. Education exerts effects on health seeking behaviour of mothers through a number of pathways including higher level of awareness and greater knowledge of available health services to be used during pregnancy and childbirth. It also improves their ability to afford the cost of medical health care, and enhances their level of autonomy which may lead to improved ability and freedom to make health related decisions such as choice of maternal health services to be used (Addai, 2000). Education may impact feeling of self-worth and confidence as well as reduce the power differential between service providers and clients, thereby reducing the reluctance to seek care.

The findings in table 4 showed that childbearing mothers with primary education possesses low awareness (30.7%) of preventive measures of neonatal tetanus, those with secondary education possessed very high awareness (83.1%) while those with tertiary education possessed high awareness (77.3%) of the same issue. The findings in table 6 showed that there was significant difference in the awareness of preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education. The finding was expected and therefore not surprising because several studies have indicated that education of a woman is a strong determinant of her level of exposure to disease prevention. Higher education suggests a more informed approach to both safe care and the use of the health care services (Addai, 2000). An educated woman may have the knowledge of the risk factors for neonatal tetanus and may also want to take steps to avoid them, unlike uneducated woman who is limited in knowledge. Hueston, Greesey, and Diaz (2008) observed that women with lower education are more likely to have less or delayed prenatal care.

### **Conclusion**

The findings have shown that childbearing mothers in Isiala Ngwa South LGA of Abia State possessed average awareness (52.6%) of causes of neonatal tetanus; childbearing mothers in Isiala Ngwa South LGA of Abia State possessed average awareness (56.7%) of preventive measures of neonatal tetanus; childbearing mothers with primary education possessed low awareness (26.9%) of causes of neonatal tetanus, those with secondary education possessed high awareness (60.5%) while those with tertiary education possessed average awareness (55.0%) on the same issue; childbearing mothers with primary education possessed low awareness (30.7%) of preventive measures of Neonatal Tetanus, those with secondary education possessed very high awareness (83.1%) while those with tertiary education possessed high awareness (77.3%) on the same issue; there were significant difference in the awareness of causes and preventive measures of neonatal tetanus among childbearing mothers in Isiala Ngwa South LGA of Abia State based on level of education.

### **Recommendations**

Based on the findings and conclusions of the study, the following recommendations were made:

1. There is need for health educators to intensify awareness campaign programme to help increase the awareness of mothers.
2. Health-care workers should help in educating mothers on the causes and preventive measures of neonatal tetanus.



3. Health educators care workers should routinely assess tetanus toxoid status of all female patients of a reproductive age and vaccinate them according to Ministry of Health Vaccination guidelines.

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