



Impact of public health awareness on curtailing morbidity and mortality associated with maternal, child, and neglected tropical diseases in Yobe State, Nigeria

Saleh Mohammed Yerima^{1*}, Jain Vikas²

^{1,2} School of Pharmacy & Allied Health Sciences, Career Point University Kota Rajasthan, India

² Mahakal Institute of Pharmaceutical Studies Ujjain, India

¹ Yobe State Ministry of Health, Nigeria

* Corresponding Author: Saleh Mohammed Yerima

Article Info

ISSN (online): 2582-8940

Volume: 03

Issue: 03

July-September 2022

Received: 28-07-2022;

Accepted: 30-08-2022

Page No: 35-43

Abstract

Introduction: Providing public health awareness is a fundamental component of diseases control and prevention strategies and the impact of public health awareness in the recent decades have witnessed a radical changes & achievements in curtailing and eradicating many kinds of diseases across the globe. Controlling COVID 19 pandemic is a typical example of public health awareness achievement, as there is no single person around the globe that is not aware of COVID-19, it causes, it risks factor and it preventive measures. As such, raising awareness is a key plank and integral aspect of public health approach to both preventive, curative, and palliative cares and most importantly that of preventive one, hence raising public health awareness is of a great subject of consideration in public health arena, as public health awareness is a movement for every individual, families and communities to achieve the state of fulfilled physical, mental, psychological, and social needs. But, unfortunately most of the researchers prefer not to address this topic.

Aims & Objectives: This study aimed at assessing the situation, status, and levels of community's health knowledge and awareness related to causes and risk factors associated with maternal, child and neglected tropical diseases (NTDs) morbidity and mortality in the case study area. Findings of this research can be used by policymakers and health workers in curtailing the morbidity and mortality associated with maternal, child and neglected tropical diseases.

Material & Method: This research study was conducted in Yobe state, Nigeria. A cross-sectional survey research design was adopted using closed-ended questionnaire and dichotomous questions (YES or NO) were used, because it is the easiest form of questionnaire for the respondents in term of responding the questions, especially when most of the respondents are not literate. The data were collected from all specialist and general hospitals of 17 LGAs of Yobe state, targeted at women that attending antenatal and postnatal cares. 50 questionnaires were administered at each hospital, totalling 850 questionnaires across 17 hospitals and the data collected were analyzed with the aid of SPSS and presented in tables and figures and then the results were discussed.

Result: Based on findings of this research study, of the three zones of Yobe State (Zone A, B & C), Zone 'B' has highest levels of maternal knowledge and awareness with total percentage (70.14%) and then followed by Zone 'A' with a total percentage of (64.58%) and lastly Zone 'C' with a total percentage of (58.29), so also Zone 'B' has highest levels of child knowledge and awareness with a total percentage (84.14%) and then followed by Zone 'A' with a total percentage of (57.23%) and lastly Zone 'C' with total percentage of (55.60%).

Conclusion: The findings of this research study has established that there is low levels of knowledge and awareness related maternal, child, and neglected tropical diseases in the case study area and in particular that of the knowledge and awareness related to causes and risk factors associated with Neglected tropical diseases (NTDs). Morbidity and mortality associated with maternal, child and neglected tropical diseases has recorded huge impact in the case study area due to poor level of knowledge and awareness and it's therefore raising awareness is tailored to end this menace.

Keywords: Impact, Public Health Awareness, Curtailing, Morbidity & Mortality, Associated, Maternal-Child-Neglected Tropical Diseases, Yobe State Nigeria

1. Introduction

Public health awareness is a movement for every individual, families and communities to achieve the state of fulfilled physical, mental, psychological, and social needs and the goal of holding health awareness events is to raise attention towards educating general public about the diseases causes, risk factors and to give them clue of preventive measures (1).

A large number of medical researchers confirmed that about 70% of people are getting diseases as a result of lack of awareness, unhealthy lifestyles, poor health care seeking behaviours, and negative socio-cultural practices on health (2). In fact, all these negative factors can be eliminated if health awareness and education are being paid more attentions (3). When considering that the health aspect includes the two dynamic main fields: that is health education which represented by acquiring knowledge and information related to health as well as health awareness which is presented by the practical application of that knowledge and information acquired to improves health and wellness (3).

The impact of public health awareness in the recent decades have witnesses a radical change & achievement in the diseases' type and their outbreak in many communities across the globe ranging from infectious diseases to chronic ones, particularly the diseases which are called the living style illnesses such as heart diseases, blood pressure, and diabetes as well as the increases in other related problems like drug addiction, and misuse of medications. Besides, there are the other negative effects of excessive growth in populations, environmental pollutions, malnutrition and related illnesses which all lead to failure individual's mental and physical capacity, and indeed this is equally could only be achieved through public health awareness intervention (4).

1.1 Maternal Morbidity and Mortality

In spite of tremendous roles that women play in society-socially, economically and politically and most importantly that of their reproductive role which is a backbone in the breeding of the human species, but that the neglected catastrophe of maternal morbidity and mortality has been described as the health scandal of our era (5). Ideally, motherhood is celebrated as a joyous occurrence to both the couples, family members as well as their community to see a successful pregnancy followed by healthy delivery and to reap the benefit of motherhood, yet in many Nigerian households, it is synonymous with sadness since the reality of motherhood is often grim, austere and frightful they are no means risk-free in discharging of this remarkable role, majority of women die annually from complications of pregnancy and child birth (6). The heartsore and saddest part of the story is that almost 80 percent of these maternal morbidity and mortality are preventable if there is good health awareness on it causes, risk factors and access to basic essential maternal health care services.

1.2 Child Morbidity and Mortality

At the dawn of the twenty-first century, it is tragic that one in seven Nigerian children die before his or her fifth birth day (7). A baby born in Nigeria is 30 times more likely to die before the age of five than one born in an industrialized country (8). With more than one million children dying annually from preventable causes and treatable diseases, even though the knowledge and technologies for life saving's intervention are available and obtainable, but Nigeria is one of the least successful of Africa countries in achieving improvements in child survival in the past four decades, in spite of advances in universal immunization and oral rehydration therapy (ORT) for diarrhoeal disease and the wealth of Nigeria's human and natural resources, indeed this is an unacceptable. UNICEF'S 1999 Multiple Indicator Cluster Survey (MICS) shows that under 5 years' mortality rate (U5MR) was almost 1.5 times higher in rural areas than

in urban areas and that almost twice as many children died before witnessing their fifth birthday in the north-east than in the southwest of Nigeria (9).

1.3 Morbidity and Mortality Associated with Neglected Tropical Diseases (NTDs)

Neglected Tropical Diseases (NTDs) are a group of 17 diseases caused by heterogeneous of public health importance (bacterial, parasitic, viral, and fungal infections) that are prevalent and endemic in 149 countries of the tropical and sub-tropical developing countries (Africa, Asia and Latin America) where poverty is rampant that primary occur in impoverished communities and may impair the course and outcome of pregnancy, childhood growth, intellectual development, education and worker productivity and impose a heavy burden on poor people, families, communities, and countries (10, 11). The poorest of the poor have suffered from deadly, painful and disfiguring tropical diseases since ancient times. Disparity between the haves and the have-nots has continued, and global climate change-besides unleashing natural climates-is also creating conditions for diseases to thrive and for vectors to re-emerge in regions where they were previously thought to have been eliminated. The resurgence of dengue fever over the past few years is testimony to this phenomenon. They frequently cluster geographically and overlap; individuals are often afflicted with more than one parasite or infection (10, 11).

Neglected tropical diseases (NTDs) are communicable diseases linked with poverty and prevalent in areas with poor sanitation, inadequate safe water supply and substandard housing conditions and children are most vulnerable to infections of most neglected tropical diseases. Neglected tropical diseases kill, impair or permanently disable millions of people every year, often resulting in life-long physical pain, social stigmatization and abuse. Otherwise NTDs have been neglected many can be prevented, eliminated or even eradicated with improved access to existing safe and cost effective tools (12).

2. Methodology

2.1 Aims & Objectives

This study aimed at assessing the situation, status, and levels of community's health knowledge and awareness related to causes and risk factors associated with maternal, child and neglected tropical diseases (NTDs) morbidity and mortality in the case study area. Findings of this research can be used by policymakers and health workers in curtailing the morbidity and mortality associated with maternal, child and neglected tropical diseases.

2.2 Materials & Method

This research study was conducted in Yobe state, Nigeria. A cross-sectional survey research design was adopted using closed-ended questionnaire and dichotomous questions (YES or NO) were used, because it is the easiest form of questionnaire for the respondent in term of responding the questions, especially when most of the respondents are not literate. The research was conducted at all secondary health facilities of 17 LGAs of Yobe state targeted women that attending antenatal and postnatal cares. 50 questionnaires were administered at each hospital, totalling 850 questionnaires across 17 hospitals and for smooth conduction of the research study, the data collection was divided in to 3 senatorial zones of the state, i.e., Yobe East (Zone 'A'), Yobe

South (Zone 'B') and Yobe North (Zone 'C').

The Questionnaire is made up of four parts 1, 2, 3 & 4 (these four parts consist of 70 questions). Part '1' was on social and demographic information about the respondents, its consist of seven (7) questions and the questions were arranged to get an information related to their age, year of married, number of the children, educational background, occupation, income, and marital status as this information greatly provided clue in knowing the status, situation and levels of their knowledge, whereas, Part '2' was the questions on maternal aimed to assessed the levels of their knowledge and awareness related to causes and risk factors associated with maternal morbidity and mortality and for this reason 31 questions were formulated, as well as, Part '3' was the questions on child aimed to assessed the levels of knowledge and awareness related to causes and risk factors associated with child morbidity and mortality a such, 17 questions were formulated, so also, Part '4' was the questions on neglected tropical diseases (NTDs) aimed to assesses the levels of knowledge and awareness related to causes and risk factors associated with neglected tropical diseases (NTDs). aimed morbidity and mortality and for this reasons 31 questions were arranged and for this reason 15 questions were

formulated and the data collected were analyzed with the aid of SPSS and presented in tables and figures and then the results discussed.

2.3 Background of the Study Area

Yobe state is one of the 36 states in Nigeria, located in the North eastern part of the country and the State came into being on 27 August 1991. It was carved out of the old Borno State by the Babangida's administration. Yobe State was created because the old Borno State was one of Nigeria's largest states in terms of land area and was therefore considered to be too large for easy administration and meaningful development. Ethnic rivalries within the old Borno State also contributed to the decision (13, 14). The state has an estimated population of 3 million with over 70% living in rural areas and a female and male literacy rate of 12% and 32% respectively (14).

2.4 Study population

The study populations were consisted of all hospitals in 17 local government areas of Yobe state, as well as, women of reproductive age were selected. Below were the selected hospitals as follows.

Table 1: Selected Hospitals Across 17 LGA of Yobe State in Which Data Were Collected

L.G.As	HOSPITALS (4 Specialist Hospitals & 13 General Hospital Were Selected)
Bade	Yobe State Specialist Hospital (YSSH), Gashua. (newly upgraded to YSSH)
BURSARI	General Hospital, Dapchi.
DAMATURU	Yobe State Specialist Hospital (YSSH), Damaturu.
FIKA	General Hospital, Fika
FUNE	General Hospital, Damagum
GEIDAM	Yobe State Specialist Hospital (YSSH), Geidam (newly upgraded to YSSH)
GUJBA	Yobe State Specialist Hospital (YSSH), Yadi-Buni. (newly upgraded to YSSH)
GULANI	General Hospital, Bara
JAKUSKO	General Hospital, Jakusko (newly upgraded to GH)
KARASUWA	General Hospital, Zaji-maji (newly upgraded to GH)
NANGERE	General Hospital, Nangere
MACHINA	General Hospital, Machina (newly upgraded to GH)
Nguru	Nguru Federal Medical Centre
POTISKUM	Yobe State Specialist Hospital (YSSH), Potiskum. (newly upgraded to YSSH)
TARMUWA	General Hospital, Babangida (newly upgraded to GH)
YUNUSARI	General Hospital, Yunusari (newly upgraded to GH)
YUSUFARI	General Hospital, Yusufari (newly upgraded to GH)

3. Results and Discussion

3.1 Results

Based on above results of three zones of Yobe State (Zone A, B & C), Zone 'B' has highest levels of maternal knowledge and awareness with total percentage (70.14%) and then followed by Zone 'A' with a total percentage of (64.58%) and

lastly Zone 'C' with a total percentage of (58.29), so also Zone 'B' has highest levels of child knowledge and awareness with a total percentage (84.14%) and then followed by Zone 'A' with a total percentage of (57.23%) and lastly Zone 'C' with total percentage of (55.60%).

Table 2: Summary of All Results On Maternal, Child & Neglected Tropical Diseases (NTDs)

17 LGAs Results Summary	Maternal				Child				NTDS			
	Responses & percentage				Responses & percentage				Responses & percentage			
RESPONSE	YES	%	No	%	YES	%	No	%	YES	%	No	%
Damaturu	1086	70.06%	464	29.94	657	77.29%	193	22.29%	492	65.6%	258	34.4
Gujba	1169	75.41%	381	24.59	751	88.35%	99	11.65%	261	34.8%	489	65.2
Gulani	980	63.22%	570	36.78	815	95.88%	35	4.12%	602	80.26%	148	19.74
Tarmuwa	832	53.67%	718	46.33%	566	66.58%	284	33.42%	396	52.8%	354	47.2
Bursari	938	60.51%	612	39.49	643	75.64%	207	24.36%	331	42.13%	419	57.87
Geidam	1314	84.77%	236	15.23	775	91.17%	75	8.83%	588	78.4%	162	21.6
Yunusari	688	44.38%	862	55.62	431	50.70%	419	49.3%	335	44.66	415	55.34
Nangere	1123	72.45%	427	27.55	680	80%	170	20%	318	42.4%	432	57.07
Potiskum	1158	74.70%	392	25.3%	691	81.29	159	18.71%	55	7.33%	695	92.67
Fika	882	56.90	668	43.1	704	82.82%	146	17.18%	420	56%	330	44

Fune	1186	76.51%	364	23.49	786	92.47%	64	7.53%	602	80.26%	148	19.74
Bade	915	59.03%	635	40.97	612	72%	238	28%	362	48.26%	388	51.74
Jakusko	807	52.06%	743	47.94	450	52.94%	400	47.06%	222	29.6%	528	70.4
Machina	865	55.80%	685	44.2	670	78.82%	180	21.18%	562	74.93%	188	25.07
Nguru	988	63.74%	562	36.26	675	79.41%	175	20.59	510	68%	240	32
Karasuwa	887	57.22%	663	42.78	602	70.82%	248	29.18%	444	59.2%	306	408
Yusufari	959	61.87%	591	38.13	619	72.82%	231	27.18%	402	53.6%	348	46.4

Description: Above Data Were Summary of All Responses On Maternal, Child and Neglected Tropical Diseases (NTD) Of Seventeen (17) Local Government Areas/Health Felicities Across Yobe State.

Comparison of Three Zones (Yobe East, South & North)

Results: Based On Their Responses Related to The Levels of Knowledge and Awareness On Causes and Risk Factors Associated with Maternal, Child and Neglected Tropical Diseases.

Table 3: Yobe East (Zone 'A') Result

Zone'a' (Yobe East)	Maternal (Total 1550 X 7 =10850)				Child (Total 850X7=5950)				NTDS (TOTAL 750X7=5250)			
1.Damaturu	Frequency & Percentage				Frequency & Percentage				Frequency & Percentage			
2. Gujba	Yes		No		Yes		No		Yes		No	
3. Gulani												
4.Tarmuwa	7007	64.58	3379	35.42	4638	77.94	1312	22.06	3005	57.23	2245	42.77
5. Bursari												
6. Geidam												
7. Yunusari												

Description: Above data were summary of all responses on maternal, child and neglected tropical diseases (NTD) from Yobe East (Zone 'A') which comprises of seven local government areas and at each local government area one

secondary health facility was selected as follows: General Hospital Nangere, Yobe State Special Hospital Potiskum, General Hospital Fika, General Hospital Damagum, respectively.

Table 4: Yobe South (Zone 'B') Result

Zone'b' (Yobe South)	Maternal (Total 1550 X4=6200)				Child (Total 850X4=3400)				NTDS (Total 750X4=3000)			
1. Nangere	Frequency & Percentage				Frequency & Percentage				Frequency & Percentage			
2. Potiskum	YES		NO		YES		NO		YES		NO	
3. Fika	4349	70.14	1851	29.86	2861	84.14	539	15.86	1395	46.5	1605	53.5
3. Fune												

Description: above data were summary of all responses on maternal, child and neglected tropical diseases (NTDs) from Yobe South (Zone 'B') which comprises of seven local government areas and at each local government area one

secondary health facility was selected as follows: General Hospital Nangere, Yobe State Special Hospital Potiskum, General Hospital Fika, General Hospital Damagum, respectively.

Table 5: Yobe North (Zone 'C') Result

Zone 'C' (Yobe North)	Maternal (Total 1550 X 6=9300)				Child (Total 850X6=5100)				NTDS (TOTAL 750X6=4500)			
1.Bade	Frequency & Percentage				Frequency & Percentage				Frequency & Percentage			
2.Jakusko												
3.Machina												
4.Nguru	YES		NO		YES		NO		YES		NO	
5.Karasuwa	5421	58.29	3879	41.71	3628	71.13	1472	28.87	2502	55.6	1998	44.4
6.Yusufari												

Description: above data were summary of all responses on maternal, child and neglected tropical diseases (NTDs) from Yobe North (Zone 'C') which comprises of seven local government areas and at each local government area one secondary health facility was selected as follows: Yobe State

Special Hospital Gashua, General Hospital Jakusko, General Hospital Machina, Federal Medical centre Nguru, General Hospital Zaji-maji and General Hospital Yusufari respectively.

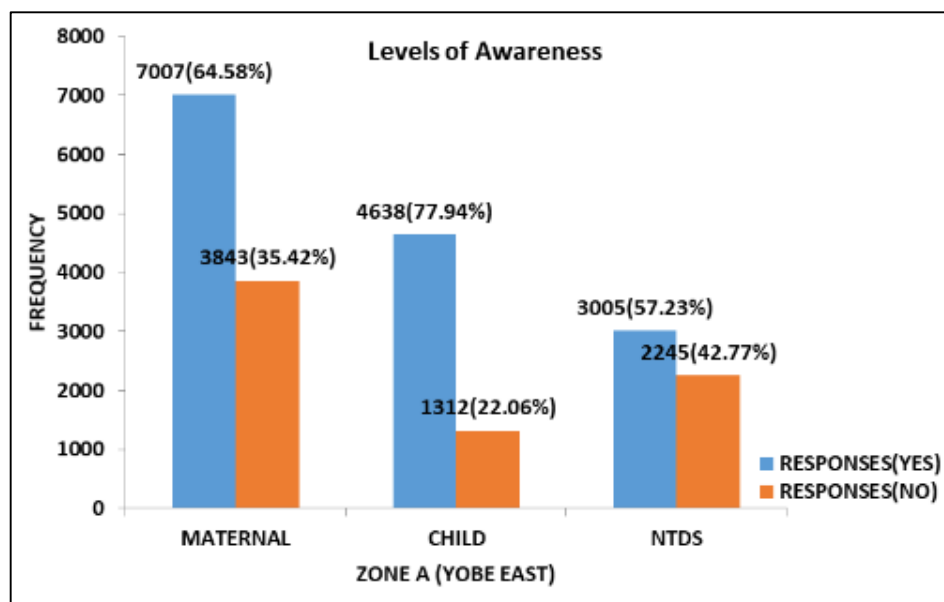


Fig 1: Result of Yobe East (Zone 'A') Levels of Knowledge & Awareness

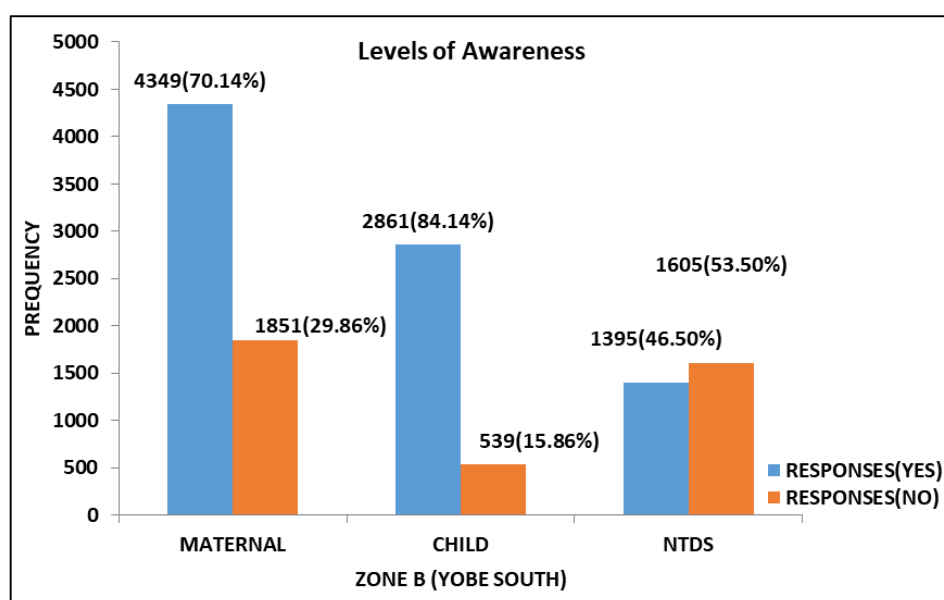


Fig 2: Result of Yobe South (Zone 'B') Levels of Knowledge & Awareness

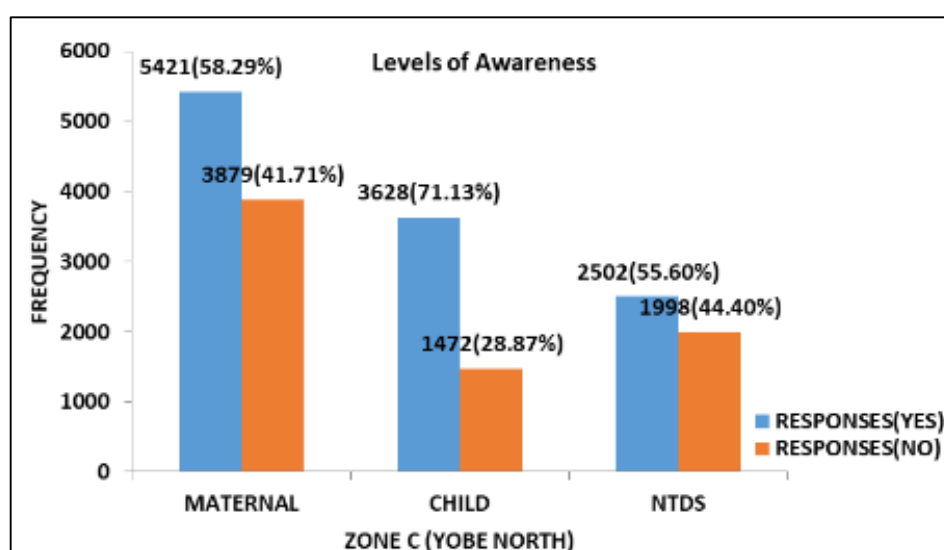


Fig 3: Result of Yobe North (Zone 'C') Levels of Knowledge & Awareness

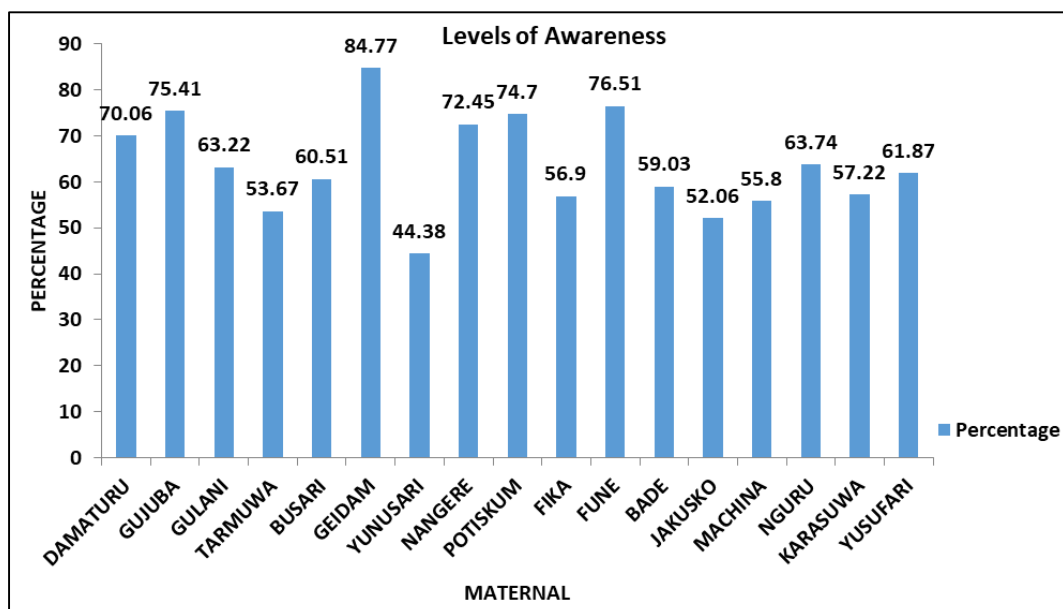


Fig 4: Result of 17 LGAs of Yobe State Levels of Knowledge & Awareness on Maternal

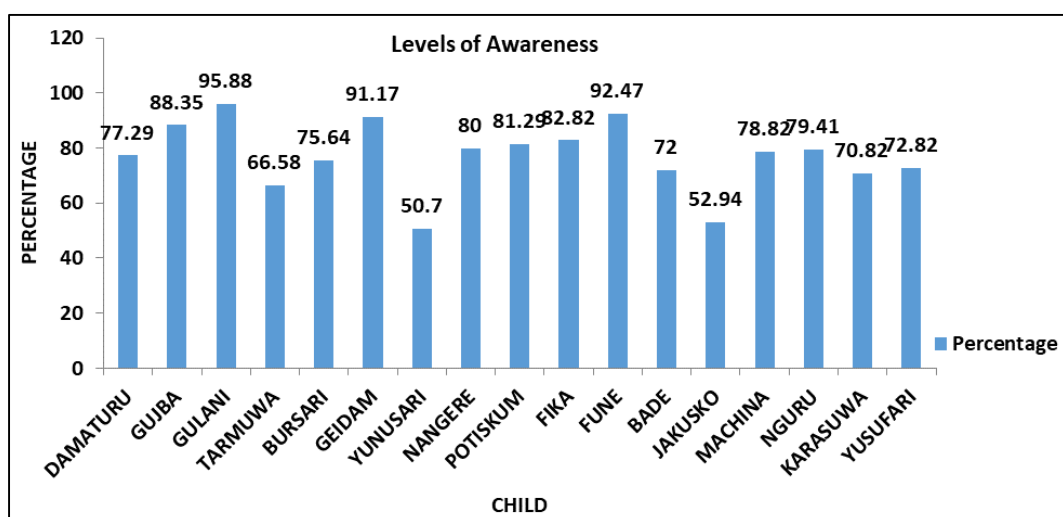


Fig 5: Result of 17 LGAs of Yobe State Levels of Knowledge & Awareness on Child

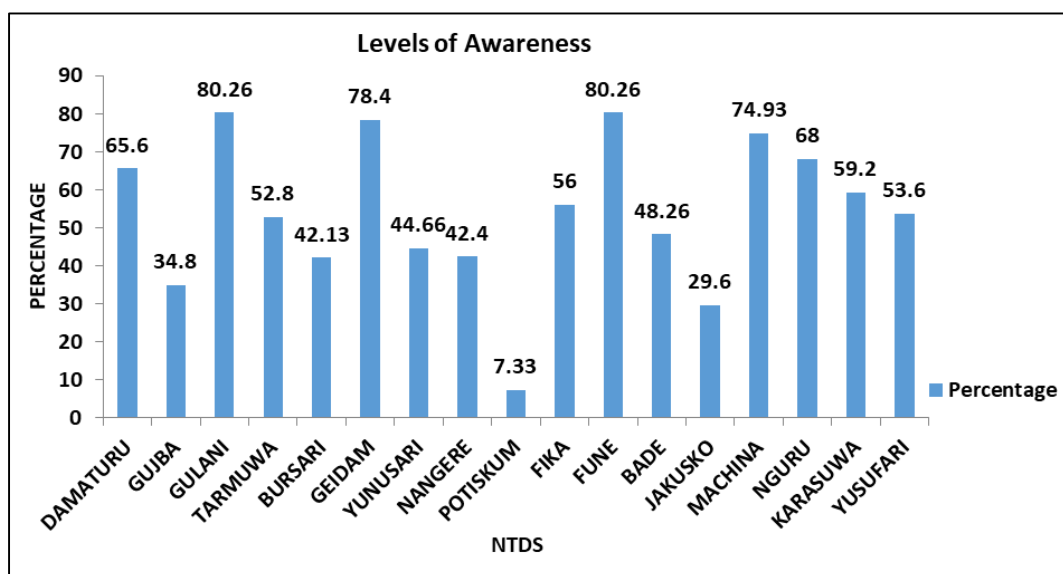


Fig 6: Result of 17 LGAs of Yobe State Levels of Knowledge & Awareness on NTDS

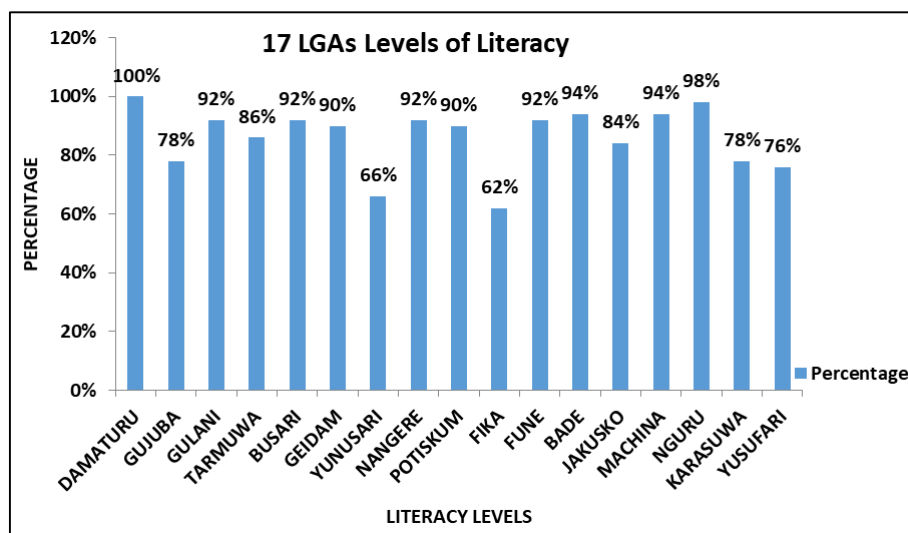


Fig 7: 17 LGAs of Yobe State Levels of Literacy

3.2 Discussions

The main justification of this research study was to assess the status, situation and levels of knowledge and awareness of the people of case study area (Yobe State) through the using research titled “Impact of Public Health Awareness on Curtailing the Morbidity and Mortality Associated with Maternal, Child and Neglected Tropical Diseases in Yobe State, Nigeria” and the findings of this research study has established that there is poor levels of knowledge and awareness related to causes and risk factors associated with morbidity and mortality associated with maternal, child, and neglected tropical disease, in particular that of knowledge and awareness of Neglected tropical diseases (NTDs), below are the details of finding, as follows:

3.2.1 Literacy Levels of the Study Areas

1. Local Government Area with Highest Literacy Levels: The Local Governments Areas with Highest Levels of literacy were fifteen (15) local government areas which Includes- Damaturu with 100%, Nguru with 98%, Bade with 94%, Machina with 94%, Bursari with 92%, Fune with 92%, Gulani with 92%, Nangere with 92%, Geidam with 90%, Potiskum with 90%, Tarmuwa with 86%, Jakusko with 84%, Gujba with 78%, Karasuwa with 78%, Yusufari with 76% respectively.
2. Local Government Area with Average Literacy Levels: The Local Governments Areas with average Levels of literacy were two (2) local government areas which Includes- Yunusari with 66%, and Fika with 62% respectively.

3.2.2 General Levels of Knowledge & Awareness of All Local Government Areas of Yobe State On Causes and Risk Factors Associated with Maternal, Child and Neglected Tropical Diseases (NTDs).

1. Highest levels of Maternal Knowledge & Awareness: Local Governments Areas with Highest Levels of Knowledge & Awareness. Out of the seventeen (17) local government areas of Yobe State were six (6) local government areas which include-Geidam with 84.77%, Fune with 76.51%, Gujba with 75.41%, Potiskum with 74.7%, Nangere with 72.45%, and Damaturu with 70.06 respectively.
2. Average levels of Maternal Knowledge & Awareness:

Local Governments Areas with Average Levels of Knowledge & awareness in Yobe State were nine (9) local government areas which includes Nguru with 63.74%, Gulani with 63.87%, Yusufari with 61.87%, Bursari with 60.51%, Bade with 59.03%, Fika with 56.9%, Machina with 55.8%, Tarmuwa with 53.67%, and Jakusko with 52.06% respectively.

3. Lowest levels of Maternal Knowledge & Awareness: Local Governments Area with Average Levels of Knowledge & awareness in Yobe State was one (1), this local government area was Yunusari Local government area with 44.38% respectively.

3.2.3 Child Knowledge & Awareness

1. Highest levels of Child Knowledge & Awareness: The Local Governments Areas with Highest Levels of Child Knowledge & Awareness were fourteen (14) local government areas which includes-Gulani with 95.88%, Fune with 92.47%, Geidam with 91.17%, Gujba with 88.35%, Fika with 82.82%, Potiskum with 81.29%, Nangere with 80%, Machina with 78.82%, Nguru with 79.41%, Damaturu with 77.29%, Bursari with 75.64%, Yusufari with 72.82%, Bade with 72%, and Karasuwa with 70.82%.
2. Average levels of Child Knowledge & Awareness: The Local Governments Areas with Average Levels of Child Knowledge & Awareness were three (3) local government areas which includes: Tarmuwa with 66.58%, Jakusko with 52.94%, and Yunusari with 50.7%. There no local government area with lowest levels of child knowledge and awareness.

3.2.4 Level of knowledge and awareness on NTDs

1. Highest levels of NTDs Knowledge & Awareness: The Local Governments Areas with Highest Levels of NTDs Knowledge & Awareness were four (4) local government areas which includes-Gulani with 80.26%, Fune with 80.26%, Geidam with 78.4%, Machina with 74.39% respectively.
2. Average levels of NTDs Knowledge & Awareness: The Local Governments Areas with Average Levels of NTDs Knowledge & Awareness were six (6) local government areas which includes- Nguru with 68%, Damaturu with 65.6%, Karasuwa with 59.2% Fika with 56%, Yusufari

with 53.6%, and Tarmuwa with 52.8% respectively.

- Lowest levels of NTDs Knowledge & Awareness: The Local Governments Areas with lowest Levels of NTDs Knowledge & Awareness were seven (7) local government areas which Includes-Bade with 48.26% Yunusari with 44.66%, Bursari with 42.13%, Nangere with 42.13%, Gujba with 34.8%, Jakusko with 29.6% and lastly Potiskum with 7.33%.

3.2.5 Three Zones of Yobe State Results Discussion

- Zone 'A' Result: Zone 'A' comprises of seven (7) local government areas, namely- Damaturu, Gujba, Gulani, Tarmuwa, Bursari, Geidam, Yunusari and has knowledge and awareness levels of Maternal 7007 (64.58%), Child 4638 (77.94%) and NTDs 3005 (57.23%).
- Zone 'B' Result: Zone 'B' consist of four (4) local government areas, namely- Nangere, Potiskum, Fika and Fune and has knowledge and awareness levels of Maternal 4349 (70.14%), Child 2861 (84.14%) and NTDs 1395 (46.50%).
- Zone 'C' Result: Zone 'C' composed of six (6) local government areas, namely Bade, Jakusko, Machina, Nguru, Karasuwa, Yusufari and has knowledge and awareness levels of Maternal 5421 (58.29%), Child 3628 (71.13%) and NTDs 2502 (55.60%) respectively.

3.2.6 Comparison of General Levels of Knowledge & Awareness three geopolitical Zones of Yobe State On Causes and Risk Factors Associated with Maternal, Child and Neglected Tropical Diseases (NTDs)

Based on above results of three zones of Yobe State (Zone A, B & C), Zone 'B' has highest levels of maternal knowledge and awareness with total percentage (70.14%) and then followed by Zone 'A' with a total percentage of (64.58%) and lastly Zone 'C' with a total percentage of (58.29), so also Zone 'B' has highest levels of child knowledge and awareness with a total percentage (84.14%) and then followed by Zone 'A' with a total percentage of (57.23%) and lastly Zone 'C' with total percentage of (55.60%). This clearly shown Zone 'B' has highest number of levels of knowledge and awareness on causes and risk factors associated with maternal, child and neglected tropical diseases than the other two Zones, i.e. Zone A& C, of the remaining two Zones (Zone A & C) Zone 'A' has highest levels of knowledge and awareness. Although, the results differences between Zone 'B', Zone 'A' & Zone 'C' are not that too much, but whenever the need of raising awareness arises considering the results of these three geopolitical zones an emphasis of raising awareness should be given to Zone 'C' first then followed by Zone 'A' and lastly Zone 'B' while creating awareness.

4. Conclusions

The findings of this research study has established that there is low levels of knowledge and awareness related maternal, child, and neglected tropical diseases in the case study area and in particular that of the knowledge and awareness related to causes and risk factors associated with Neglected tropical diseases (NTDs). Morbidity and mortality associated with maternal, child and neglected tropical diseases has recorded huge impact in the case study area due to poor level of knowledge and awareness and it's therefore raising awareness is tailored to end this menace. Because the interest

in community's health aspect is considered one of the basic goals of public health in campaigning and sensitizing general public so as to accomplished it desired goal of preventive and control measures through gingering and helping community in imparting health knowledge, developing proper attitudes in seeking health care, and taking proper decisions that promote health, protect life and prevent individual from catching diseases. However, despite the series of a concerted efforts by Governments, multilateral health organisations, Bilateral Health organisations, NGOs, Philanthropists, and an individuals geared towards curtailing and ending the menace of morbidity and mortality associated with maternal, child and neglected tropical diseases across the globe, but there are still challenges and yet the desired goal of MDGs didn't achieved, more especially in developing countries and African in particulars. So there is a need for rebooting robust strategies to achieved this goal and of course Public health awareness campaign is tailored in achieving this goal.

5. Recommendations

Based on the findings of this research study, the following recommendation are made in order to curtails the high incidence of morbidity and mortality associated with maternal, child and neglected tropical diseases in the study areas which are preventable and avoidable, as the prime aims of holding health awareness events is to raise attentions and educate the general public about causes of diseases, it risk factors, and the preventive measures.

(i). Health Education: Public Health awareness campaign programme is critically needed in the study area and therefore Government should raise public health awareness campaign through Television, Newspapers, social media, radio, as well as billboard, seminar and direct heath talks in case of rural remote areas using local languages understandable to all and sundry while imparting and disseminating the heath knowledge and awareness.

(ii). Bridging communication barriers or gaps: When imparting health knowledge and awareness we bear must of the responsibility for whether or not the actually gets there as intended, because most our existing health talks and awareness are doing in English language which is totally wrong as the message couldn't the reach the intended populations because almost 70 per cent of Nigerian are rural settlers who are not literates and the message meant for them because they are the most vulnerable populations when compared to those who residing in urbans and cities.

(iii). Girl Child Education: A more educated mother is likely to practice healthy lifestyle behaviors, such as good nutrition, hygiene, complications during Pregnancy, feeding mother with information on how to care for herself and her baby and access to health. Additionally, mothers that are more educated are likely to visit the doctor, be more confident in asking healthcare questions, and understand the potential risks during their pregnancies. Educated mothers will also always apply these healthy behaviors in their families and pass on these ideas about good nutrition, exercise, and other health related issues and therefore more emphasizes should be given to girl child and women adult educations.

(iv). Empower women to obtain better health and social services: This lays emphasis to the fact that all women should undertake deliveries under the care of skilled birth attendants and this can be achieved through dynamic policy such as free maternal and child health care services.

(v). Engage Religious and community Leaders: Government should involve religious and community leaders in

sensitizing general public, as they are very closer to their subjects and they are highly respected by members of their respective communities.

6. Quality Control

Questionnaire was used, the questions were readout to those respondents who cannot read the content of the questionnaire (either because of illiteracy or vision problem) using local languages and the study purpose was clearly explained to them. Research assistants were recruited in this respect, they helped this categories of respondents and translated them the questions in their native languages and their options were ticked. Hausa, Kanuri and Fulfulde languages were used as the medium of communication.

7. Research Ethical Approval

I letter dated 10th October 2019 was written to Yobe State Ministry of Health seeking for clearance to conduct this research study through Director research and subsequently Yobe State Health Research Ethical Committee (YOHREC) was executed a meeting on my research proposal and clearance letter was issued to me dated, 15th October 2019 with Ref. No: MOH/GEN/747/VOL.I.

8. Acknowledgments

My special appreciations goes to Yobe Ministry of Health and all Principal Medical Officers (PMO) of 17 selected Hospitals across the state for giving me an ultimate opportunity to developed this research findings which is mandatory part of the requirements for the fulfillment of the award of Doctor of Philosophy, also my special thanks goes to all Nurses & Midwives that unconditionally helped me during my data collection, also a very big accolade goes to my research assistants for their exceptional contribution towards the success of this research and to all our respondents who participated in this research study, and above all, my appreciations goes to Yobe State Government of Nigeria.

9. References

1. Chaponniere PA, Cherup SM, Lodge L. Measuring The Impact of Health Education Modules in Cameroon, West Africa. *J Transcult Nurs*. 2013; 24(3):254-62.
2. Physical Activity and Healthy Eating the Global Strategy: World Health Organisation, Geneva: The World Health Organisation, 2004.
3. Jianfeng B. On Health Communication and Public Health Behaviour Optimization in China: Ph.D. Thesis. Wuhan: Wuhan University; School of Journalism and Communication, 2012.
4. Al-Amoudi H. The Efficacy of a Suggested Health Education Program for Developing the Health among the Middle Stage Students in Makah. Unpublished Ph.D. Dissertation, the Islamic University, Ghaza, 2007.
5. Fathalla MF. Imagine a World Where Motherhood Is Safe For All Women-You Can Help Make It Happen. *Int J Obstet Gynecol*. 2001; 72:207-13.
6. Ayanleye, Oluwakemi Amudat. Women and Reproductive Health Rights in Nigeria. *Oida International Journal of Sustainable Development*. 2013; 6(5):127-140.
7. Federal Office of Statistics (FOS)/UNICEF. Multiple Indicator Cluster Survey, 1999 Draft Data Tables. Lagos: FOS and UNICEF, 2000.
8. National Planning Commission (NPC) and United Nations Children's Education Fund (UNICEF) 2001.

Children's And Women's Right in Nigeria: A Wake-Up Call, Situation Assessment and Analysis. Lagos, Nigeria: NPC and UNICEF, 2001.

9. United Nations Children Fund (UNICEF). Multiple Indicator Cluster Survey. Lagos: UNICEF.
10. World Health Organisation (WHO). Accelerating Work to Overcome Global Impact of Neglected Tropical Diseases: A Roadmap for Implementation. Geneva: WHO, 2010.
11. Hotez, Peter, David H. Molyneux, Alan Fenwick, Jacob Kumaresan, Sonia Ehrlich Sachs, Jeffrey D. Sachs, And Lorenzo Savioli. Control of Neglected Tropical Diseases. *The New England Journal of Medicine*. 2007; 357(10):1018-1027.
<http://www.nejm.org/doi/pdf/10.1056/nejmra064142>. WHO/CDS/NTD/2006.2. Geneva, World Health Organisation, 2016.
12. World Health Organisation (WHO). Department of Control of Neglected Tropical Diseases (NTDS). WHO, Geneva. <http://www.who.int/neglecteddiseases/en/>.
13. Yobe State of Nigeria: Nigeria Information & Guide. www.nigeriagallery.com. Retrieved 2022-03-06.
14. Yobe State Government. Strategic Health Development Plan 2010-2015. Yobe State Ministry of Health. 2010; p12-14. Available: [Accessed March 5, 2015]. <http://www.mamaye.org/sites/default/files/evidence/Yobe%20Naration2.pdf>