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A Publication of

Health Research Institute

Nic Maurice Colleges of Health, Management, Sciences & Technology,
Amamong, P.M.B 1006 Okobo, Okobo Local Government Area, Akwa Ibom State, Nigeria.

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Publishers Address: Nic Maurice Colleges of Health, Management, Sciences and Technology
Amamong, P.M.B 1006 Okobo, Okobo Local Government Area,
Akwa Ibom State, Nigeria.

Phone: +234 8023113691, +234 08151144603

E-mail: nicmauricecollege@gmail.com or nursingnigeria@yahoo.com.

Editors: Grace, J. Eka, RM, RN, CHO, HND (PH), B.Sc (HE), M.Sc (Comm. H)
Aniekan U. Umoh, RPN, RN, RPHN, RM, B.Sc, MPH

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Contributors: **Adeyemo Mordiyah Omolara A. (Mrs.)**, R.N., B.Sc. (Nursing) M.P.H

D. K. Ajio, MSc [N], RN

F. Y. Lekke, Med [G & C], RN/RM

Health Research Institute

Iboh, Joan: RM, RN, B.Sc, M.Sc (Hospital Administration)

Imasogie-osa Temple Wonderful

Itam, Winifred Paulinus: RM, RN, B.Sc, PGDE, M. Ed. (Environmental Education)

Joseph Tamar Enkemimiweremi

Musbahu Ado Roni

O. A. Ogunyewo, MSc [N], MSc [Med Soc], RN

Oluwatosin O.Abimbola, B.Sc., M.Sc. Ph.D.(Nursing)

Otu, Elizabeth Asinyang: RM, RN, B.Sc, M. Ed, Ph.D (Health Education)

Samuel Afekekere

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Chief Editor

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SURVIVING IN THE ACADEMIC COMMUNITY AND ENHANCING PRODUCTIVITY AMONG ACADEMIC STAFF IN HEALTH TRAINING INSTITUTIONS

Otu, Elizabeth Asinyang: RM, RN, B.Sc, M. Ed, Ph.D
 (Health Education)
 (Chief Lecturer)
 College of Health Technology, Calabar
 E-Mail: elizabethotu67@gmail.com
 Tel: 08029543914; 09091963379

Itam, Winifred Paulinus: RM, RN, B.Sc, PGDE, M. Ed.
 (Environmental Education)
 College of Health Technology
 Calabar.
 Tel: 08035805860

Iboh, Joan: RM, RN, B.Sc, M.Sc
 (Hospital Administration)
 Tel: 08038350567

ABSTRACT

The Topic "Surviving in the academic community and enhancement of productivity among academic staff in health training institutions" seeks to examine how the elements that are integral part of an academic setting can continue to remain relevant and productive in the academic system with particular reference to health training institutions. Remaining relevant in the academic system is a pointer to the fact that one could be in the system and not be relevant in any way. An element that is productive and contributes to the success of the system to which he/she belongs is a relevant element. Outside this, most systems will not hesitate to open the exit door to any irrelevant and unproductive staff. This topic is therefore important because it will improve the knowledge and understanding of academic staff in various health training institutions on how to be essentially significant on their jobs and in their job settings.



Introduction:

Surviving simply means to exist, to live or to continue to remain while productivity means to be useful, constructive and yielding positive results. Environment on the other hand is defined differently by different schools of thoughts. However, Soanes (2008) defines environment as a particular system setting with elements whose functions influence the inputs and outputs and of the system. Therefore the academic community can be said to be an academic setting where elements that are integral parts of the system significantly influence the overall inputs and outputs of the academic operating system.

Tools that Enhance Survival and Productivity in the Academic Community.

1. Employment into the Academic Community and due recognition of the hiring structure.

Every academic staff in health training institutions is genuinely employed by a body that has been charged with the responsibility to hire (employ) qualified personnel; meaning that every staff officially hired is an employee while the hiring body is the employer. Recognition of this fact by academic staff is critical in making them realize that they owe their employers a duty to be productive in their places of work.

Such recognition will motivate teaching staff to be productive by so doing, continue to survive in the academic community.

Thompson (2018) said staff recognition of a hiring structure is the true, valid, official acceptance or awareness of the status of an employer by the employee. Continuing, Thompson also affirmed that such recognition is critical in the survival of employee in the workplace and is usually demonstrated by utmost respect to constituted authority, observing due process in matters of grievances and being law abiding even when personal ideologies conflict with official policies.

2. Make-up of the Academic Community and Peaceful Co-existence

Within any academic system are primarily teaching staff, non-teaching staff and students. The community can also temporarily or permanently host other persons and visitors who transact personal or official businesses. It is expedient to bring to bare the elements within the academic setting and to emphasize that peaceful co-existence among these elements is key to surviving in the academic community and the successful operation of the academic system in general.

In the light of the above, Williams (2017) said no one staff in any workplace can function as an island; the friendship, cordial relationship and peace among the work force is a major lubricant of the system for efficient productivity. We leave our homes to resume work in our offices by 8:00 and close nothing earlier than 4:00pm. One would discover that a greater part of our time in five days of a week is spent in the work environment.

There is therefore no gainsaying the fact that peace, friendship and happiness among teaching staff, students and other elements within the health training institutions will enhance academic staff survival in the academic community and promote productivity. It is impossible for an unhappy lecturer to survive and be productive in his/her workplace.

- 3. Meeting Expectations:** Another tool for surviving in the academic community is a tool of meeting expectations. To survive in the academic community, lecturers are expected to conduct themselves professionally and try to function within the expectations of their employers (O'brien, 2014).

According to Virginia Tech (2018) the relationship between the employer and employee is likely to run into trouble where expectations are not consistently met and most of the time, productivity is equally affected. Against this backdrop, the following are expected of academic staff.

- A lecturer is expected to have clear understanding of his/her job description and to approach the job with open mind so as to learn quickly on the job, acquire requisite skills and be productive in the system.
- Do not disregard the position of your immediate supervisor or Head of Department.
- To survive and be productive in the academic community, a lecturer is expected to arrive at work early, leave only at close of work and obtain proper permission ahead of time to be late for work, sickness or absence from work, not to stay off duty at will without the knowledge of the head of Department or any overseeing boss.
- Dress appropriately to work (Robertson, 2014).
- To survive and be productive in the academic system, Jamaledine (2017) pointed out that academic staff should be reliable, dedicated, conscientious, honest, respectful in the daily discharge of duties as well as be cheerful and flexible especially in the performance of

duties outside normal responsibilities (adhoc duties).

- Take directives from the Provost, Principal, or Head of Department and obtain approval from same prior to accepting official engagements outside the workplace (Schreiner, 2018).
- Make work-related decisions that are in the best interest of the institution and report circumstances or situations that may interfere with satisfactory work performance to the Head of Department who may forward same to the management if necessary (Craig, 2017).
- To survive and be productive in the academic community, a lecturer may need to occasionally exceed job performance expectations (that is, putting in more effort and time to achieve beyond expectation and still fall within deadlines).

The above list is endless.

- 4. The role of scaling agents:** Another tool that will enhance survival and productivity of academic staff in health training institutions is the favourable disposition of scaling agents to their role. The role of scaling agents in the academic community cannot be overlooked. Scaling agents in the academic community are primarily the employers, supervisors and other key officers who form the decision – making hub.

Just as so much is expected from employees, the scaling agents in the academic community are equally expected to help their employees (academic staff) scale job-related challenges and bureaucratic bottlenecks that may hinder their survival and productivity in their academic community.

Again, the role of scaling agents is endless but few have been brought to focus as follows:

- For scaling agents to help academic staff survive in the academic environment, there is need to regularly examine staff working conditions within the institution. Example; furnishing of staff offices, provision of work equipment/appliances, basic amenities (water, light and conveniences), prompt payment of salaries, security, provision of conducive class rooms for students, teaching laboratories and well equipped students' practical demonstration rooms (Virginia Tech, 2018).
- To help academic staff survive and be productive in the academic community, there should be regular staff training in different fields as a way of man-power development (Wikipedia, 2018).
- There should be regular academic staff

- meetings as forum for communicating organizational policies to lecturers (Wikipedia, 2018).
- d) Scaling agents should operate open-door policy through effective and open communication with academic staff (Craig, 2017).
 - e) Avoid staff preference, favouritism and promote equality (Jamaledine, 2017; Schreiner, 2018).
 - f) To help academic staff survive and be productive in the academic community, mentoring should be promoted at all levels so that knowledge and know-how is not completely domicile within some academic staff. By so doing, no academic staff is indispensable within the system. (Robertson, 2017).
 - g) Reward (motivate) lecturers when they do their job well.

Success Assessment: Favourable disposition of scaling agents (in an academic community) to their responsibilities will not only increase staff performance, encourage employee loyalty on the job, but will also reduce conflict within the academic community and result in graduating excellent student as high quality and skilled manpower into the labour market (O'brien, 2014).

5. **Climbing the academic ladder:** Surviving and being productive in the academic community is very challenging and demanding hence, requires patience, endurance and strength (Marten, 2010). To survive in the academic community, lecturers are expected to confront and surmount the under listed challenges though not exhaustively addressed.

a) Appropriate teaching qualification:

To start with, climbing the academic ladder requires the possession of appropriate teaching qualification and attention to research work. The demand by higher institutions of learning for academic staff to hold recognized and appropriate academic certificates as well as publish acceptable research articles as prerequisites for promotion cannot be overemphasized. It is very challenging for academic staff to be actively involved in research and publication of research articles at the same time pursue further studies to enhance the academic status where these ventures are not adequately funded. This is where a teaching staff displays sacrifice and determination to survive and be productive in the academic community (Marton, 2010).

b) Consumer satisfaction:

Satisfying the students being the major consumers in the academic setting in these days of steady increase in students' strength in schools equally puts more pressure on the lecturers. Balancing active research work with teaching, setting of examination questions and marking of scripts can be very challenging but must be accomplished. According to Adenekan (2010), this is where academic staff require endurance and strength so as to survive and be productive in the academic environment.

c) The shift to e-Learning:

The increasing digital literacy among students today presents academic staff with the challenges of quality digital literacy to cope with the times and survive in the teaching community (Virginia Tech, 2018).

d) Taking work home:

Even as one tries to observe health tips on stress reduction, there are times an academic staff must take work home so as to complete assignments within deadlines. Schreiner (2018) asserted that no teaching staff can cope with the work load of the academic environment if some official work is not taken home sometimes.

e) Maintaining appropriate distance in relationships:

Even as all staff (teaching and non-teaching) interacts with students in the academic community, teaching staff interact with students the more because of the responsibility of teaching and assessing students' performance.

Acceptable level of collaboration and interaction between lecturers and students is central in promoting teaching-learning. The problem is that some lecturers do not know where to draw the line when interacting with students. An appropriate distance must be maintained between lecturers and students so that lecturers do not invoke on themselves disrespect orchestrated by over-familiarity. Therefore to survive and be productive in the academic environment, lecturers should exhibit a high level of self-respect and integrity (Craig, 2017).

6. **The Web of un-ethical practices:**

Another tool for survival and be productivity among lecturers in the academic community is to avoid being caught in the web of un-ethical practices. Every steward to the public observes the ethics of the organization to which he/she belongs in the discharge of daily duties and provision of general services. Wikipedia (2018) defines ethics as rules of proper moral conduct

corresponding with the ideology of a particular society or organization. Ethics can also be defined as the accountability standard by which work done by members of an organization is scrutinized.

In the academia, teaching staff are expected to be ethics – compliant so as to survive and be productive. In the light of the above, Robertson (2017) said a teaching staff who trades examination questions for money ahead of examination is not ethics – compliant.

- 2) A lecturer who refuses to take his/her lectures timely is not ethics – compliant.
- 3) A lecturer who lets out classified documents or information without due authorization is not ethics – compliant.
- 4) A lecturer who aids examination malpractice in any way is not ethics – compliant.
- 5) A teaching staff who observes financial prudence when charged with financial responsibilities is being ethics – compliant.
- 6) Verbal and sexual harassments of students by academic staff is un-ethical.
- 7) Extortion of money from students and inciting students against constituted authority is un-ethical. (The list of un-ethical practices is endless.)

CONCLUSION

To survive and be productive in the academic community, the onus is on academic staff to be committed to their job by nurturing ethically-right thoughts and engaging in ethically-right practices at all times.

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THE IMPACT OF HEAT STRESS ON HUMAN HEALTH IN KAZAURE COMMUNITY, JIGAWA STATE NIGERIA

Musbahu Ado Roni
 Department of Public and Community Health
 Novena University, Ongume
 Delta State
 Nigeria

In collaboration with:

Health Research Institute
 Nic Maurice Colleges of Health, Management, Sciences &
 Technology, Amamong, P.M.B 1006 Okobo, Okobo Local
 Government Area, Akwa Ibom State.

ABSTRACT

This study was aimed to assessing the Impact of heat stress on human Health among people of Kazaure community, Kazaure local Government Area, Jigawa State. To guide the study which is descriptive research design, research questions and hypotheses were asked and stated respectively. Information for the data analysis was obtained through the means of a well structured questionnaire by the researcher. The data collected from the respondents were collated and analyzed using SPSS version 22.0. Descriptive Statistics of frequency and percentages was used to answer the research questions, while regression of ANOVA and Chi Square test was used to test the research hypotheses. The result obtained from the study revealed that 108(67.8%) respondents considered extreme heat as of environmental concern, and 146(90.7%) of the respondent believed that heat stress is affecting their life, 64(39.8%) agreed that people would do their best in reducing the effect of increase in heat temperature. There is positive strong association between environmental concern and increase of Health impact ($P = 0.003$, $F = 3.149$). The study also revealed that 122(75.8%) respondent believed that Government does not provide any measure in the community, and 87(54.0%) believed that industrial companies and bush burning has contributed to the cause of heat stress. The study also revealed that 146(90.7%) respondent agreed that extreme heat affects their health, and 146(90.7%) respondents also agreed that heat stress affect their families and friends. There is a significant association between extreme heat and increase of Health impact among people of Kazaure of community ($P < 0.05$, $F = 23.555$). Therefore recommends monitoring of those who are at high risk, Use of good air conditioner, and adjustment to the Environment would enable to manage and suppress the impact of heat stress on human health especially in Kazaure Community.



Introduction

Nigeria has been active on many fronts in climate change response since the inception of Rio conventions of 1992. The impact of climate change and increasing green-house gas emission on human health include Extreme Heat, increase rainfall, air pollution, sea level rise, malnutrition, windstorms, drought, and desertification. Extreme heat conditions are defined as weather that is much hotter than average for a particular time and place and sometimes more humid, too. Extreme heat is not just a nuisance; it kills hundreds of Nigerian every year and causes many more to become seriously ill. The heat index is a measure of how hot it feels when relative humidity is factored in with the actual air temperature. Relative humidity is the percentage of moisture in the air compared with the maximum amount of moisture the air can hold. Humidity is an important factor in how hot it feels because when humidity is high, water doesn't evaporate as easily, so it's harder for your body to cool off by sweating (Federal ministry of Health Nigeria, 2015).

Heat result in heat stress, heat stroke and dehydration especially for children and elderly, causes cancers, increased morbidity and mortality, injuries and fatalities, worsening sanitation condition, thus, exerting pressure on the health system. It causes wild fires, and also heat waves which are uncomfortable for everyone, but for infants and young children, the elderly, and people who are already sick, they can be

especially dangerous. Extreme heat can cause illnesses such as heat cramps, heat stroke, and even death. In 2003 heat wave in Europe caused about 50,000 deaths, and a 1995 heat wave in Chicago caused more than 600 deaths. In fact, heat waves cause more deaths in the United States every year than hurricanes, tornadoes, floods, and earthquakes combined.

It is important to monitor any deterioration in the health of an adult with the following symptoms: headaches, muscular cramps, swollen hands, feet and ankles, apparition of small red pimples (heat rash) on the skin, unusual fatigue or exhaustion, general discomfort. Signs of dehydration: excessive thirst, less frequent need to urinate, dark urine, dry skin, rapid pulse and breathing. Other symptoms require immediate medical intervention, within 2 hours. An adult with one or more of the following symptoms must promptly be taken as an emergency. Others includes convulsions (stiffness of the body and jerky, involuntary muscle difficulty contraction), Deterioration of consciousness: confusion, unusual behavior, agitation, hallucinations, lack of response to stimuli, loss of consciousness, temperature over 39.5 °C (103.1 °F) with an oral thermometer or over 40 °C (104 °F) with a rectal thermometer, dry skin, hot and red or cold and pale, dizziness and vertigo, confused and illogical speech, aggressiveness or bizarre behavior, General discomfort: heat stroke is the most serious effect of oppressive and extreme heat. It can

occur suddenly and quickly lead to death if not treated.

On Babies or Children certain symptoms may indicate complications linked to oppressive or extreme heat: Dry skin, lips or mouth, Abnormal skin colour (red or pale), Headaches, Sunken eyes with dark rings, Dark and smaller quantity of urine, Vomiting and diarrhea, Unusual restlessness, irritability or confusion, Difficulty breathing, Drowsiness, prolonged sleep and difficulty waking up. Body temperature greater than 38.5 °C (101.3 °F) with a rectal thermometer or over 37.5 °C (99.5 °F) with an oral thermometer (Note: Using an oral thermometer to take the temperature of new born, babies and children under 5 years old is not recommended.) Changes in the greenhouse gas concentrations and other drivers alter the global climate and bring about myriad human health consequences. Environmental consequences of climate change, such as extreme heat waves, rising sea-levels, changes in precipitation resulting in flooding and droughts, intense hurricanes, and degraded air quality, affect directly and indirectly the physical, social, and psychological health of humans. For instance, changes in precipitation are creating changes in the availability and quantity of water, as well as resulting in extreme weather events such as intense hurricanes and flooding. Climate change can be a driver of disease migration, as well as exacerbate health effects resulting from the release of toxic air pollutants in vulnerable populations such as children, the elderly, and those with asthma or cardiovascular disease

Although global warming may bring some localized benefits, such as fewer winter deaths in temperate climates and increased food production in certain areas, the overall health effects of a changing climate are likely to be overwhelmingly negative.

The Problem

A changing climate is driving these warming trends. Recent changes in climate have been caused by carbon dioxide and other heat-trapping greenhouse gases that people have added to the atmosphere through activities that uses fossil fuels like oil, gasoline, diesel, propane, coal, and natural gas. While natural variations continue to play an important role in extreme heat events, climate change has shifted the odds, increasing the likelihood that these events will occur. Temperatures will continue to rise as people add more heat-trapping greenhouse gases to the atmosphere. As a result, scientists expect heat waves to become more common, more severe, and longer-lasting. More extreme heat will likely lead to an increase in heat related illnesses and deaths, especially if people and communities don't take steps to adapt and protect themselves. Even small

increases in extreme heat can result in increased deaths and illnesses. Without big steps to reduce greenhouse gas emissions, the average number of extremely hot days in Nigeria is projected to more than triple from the year 2050 to 2100. This means the potential heat wave season will be longer, and extreme heat could catch communities off-guard if it happens earlier or later than expected in a particular area (USGCRP, 2016).

Justification of the study

The memorandum of the understanding was signed by the federal minister of health and consortium of the Africa clean energy summit (the consortium of Always Green Power and Systems Limited) as they are desirous of rebranding the impact of climate change on health as public issue in Nigeria and the consortium has been mandated come up with strategic programs towards the implementation of intervention for rebranding the impact climate change on health in Nigeria and Africa continent. While signing on behalf of the ministry the permanent secretary, federal ministry of health, Mr. Linus Awilte explained that the federal government was collaborating with the consortium on straitening the program towards the implementation of interventions for rebranding the impact of climate change on health of Nigerians.

Measuring the health effects from climate change can only be very approximate. Nevertheless, a WHO assessment, taking into account only a subset of the possible health impacts, and assuming continued economic growth and health progress, concluded that climate change is expected to cause approximately 250 000 additional deaths per year and between 2030 - 2050; 38 000 due to heat exposure in elderly people, 48 000 due to diarrhoea, 60 000 due to malaria, and 95 000 due to childhood undernutrition. More so, in defining global health, two health foci are of strategic importance; health problems that transcend national borders and are best addressed by cooperative actions and solutions. This differentiates global health from community and public health. Indeed there are many health conditions that are easily transmissible between borders and would require alliances between governments to eradicate or reduce the scourge of such diseases.

Of recent, the effect of climate generally and heat increase particularly can give rise to new illnesses or contribute to the exacerbation of existing ones. Increase in the concentration of greenhouse gases lead to increased energy in the atmosphere and increased carbon dioxide (CO₂). the pathways through health effects of climate change are generated. people submerged under the flood water.

Poor sanitation causing out breaks of diarrheal diseases. In all of these women, children and elderly were found most vulnerable.

Research question

- @ Is there any significant relationship between extreme heat and Health impact among people in kazaure L.G.A?
- @ What is the correlation between Government interest on extreme heat and increase of Heat stress in Nigeria?
- @ Is there any significant relationship of Environmental concern on increase of Heat impact among kazaure L.G.A?

Specific objective

- o) To identify the significant relationship between extreme heat and Health impact among people in kazaure L.G.A
- o) To examine the relationship between Environmental concern and increase of Heat impact among people of kazaure L.G.A Nigeria.

Hypothesis

- 1) There is no significant relationship between extreme heat and increase health impact among people of kazaure L.G.A
- 2) There is no significant correlation between Government interest on extreme heat and increase of heat stress among children and other people of kazaure L.G.A
- 3) There is no significant relationship between Environmental concern and increase health impact among people of kazaure L.G.A

Scope and limitation

The study is limited to the people in kazaure LGA of Jigawa State. Therefore, the study is limited to the community.

Literature Review

Nigeria has been active on many fronts in climate change response since the inception of Rio convention of 1992. The impacts of climate change and increasing green-house gas emission on human health include:

- (i) Heat,
- (ii) Air pollution,
- (iii) Sea level rise,
- (iv) Malnutrition,
- (v) Windstorms,
- (vi) Drought, and
- (vii) Desertification.

The extensive amount of information on heat stress made it necessary to have a strategic information search to find key articles. Climate change is a highly

multi-disciplinary field of study and requires scholarly information from a variety of sources. That is why the 'pearl picking' method is applied. This method uses one exceptionally useful article (often are view article) to track key articles in the field. The article chosen for the 'pearl picking' was: Kjellström, Holmérard Lemke: Workplace Heat Stress, Health and Productivity an increasing challenge for low-and middle income countries during climate change.

A thorough exploration of different databases and search engines was then carried out and several information retrieval tools were selected. Most were broad multidisciplinary platforms and databases covering a wide variety of journals and hence, more likely to have the articles desired. The information retrieval tools chosen were PubMed, Lund University's search engine Summons, Scopus, Google Scholar, Web of Science and the Science Citation Index 7). Several search words were used such as 'occupational heat exposure, occupational heat stress, occupational heat strain, heat in/at workplace, work in the heat, occupational heat stress and climate change' and the more broad search words 'heat stress'. Relevant articles were then selected. An internal database and library was also used together with the International Labour Organization's Bookshelf on Occupational Safety and Health.

The Intergovernmental Panel on Climate Change's(IPCC) Forth Assessment Report (AR4) which came out in 2007 stated clearly that 'warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level'. Data records clearly show that the eleven years between 1995–2006, rank among the warmest in the instrumental record of global average surface temperature(since 1850). For the next two decades a warming of about 0.2°C per decade is projected for a range of future scenarios of emissions of greenhouse gases. The AR4 reports that hot days, hot nights and heat waves have become and will become more frequent over most land areas. The continuous rise of absolute humidity in the lower troposphere has also been reported in many regions which add substantial implications for human thermal comfort and heat-related mortality and morbidity. In particular, this may add substantial risk in already humid countries, where a small increase in temperature can have profound consequences on heat stress. Heat waves are defined as 'extended periods of unusually High atmospheric related heat stress, which cause temporary modification in lifestyle and which may have adverse health consequences for a population. Heat waves have already affected some aspects of human health, such as excess heat related mortality in Europe during

the summer of 2003). This heat wave caused up to 70,000 deaths. In France, data on causes of deaths showed that psychiatric, cardiovascular and pulmonary illnesses were associated with a higher risk of death in heat waves, while good social contacts in the community, the use of fans, air conditioning and showers were associated with lower risk. Additionally, deaths and illnesses caused by air pollution (e.g. ozone, particles) tend to increase during extremely warm weather. It is expected that European summer temperatures as high as those experienced in 2003 will be the norm by the middle of the century. Responses to some recent extreme climate events reveal high levels of vulnerability in both developing and developed countries (Robine & Cheug et al, 2014)

There is also increasing evidence of greater vulnerability of specific groups such as poor and elderly people in all countries. High ambient temperature is a leading cause of weather related mortality in many regions of the world and heat exhaustion is the most common response to prolonged exposure to high outdoor temperatures. As the world gets warmer, populations will acclimatize to some extent, raising the optimum temperature. The possible increased use of air conditioners, though, may hinder natural acclimatization and potentially increase the risk. Human populations have a great capacity to adapt physiologically, technologically, and by behavioral change, to gradual changes in climate. However, sudden changes in weather can have a significant impact on human physiology and therefore health. Assessing the impact of climate change on health is a complex task. There are often difficulties in obtaining data. Among them are the frequent interaction of climatic-environmental influences on health with factors such as level of economic development, the state of public health systems, and individual and population behavior. Climate change will result in the increased prevalence, distribution, and severity of known occupational hazards such as heat stress and accidents although; there is no evidence of unique or previously unknown hazards in Kazaure community. However, such a possibility should not be excluded, since there is potential for interactions of known hazards and new conditions leading to new hazards and risks. Climate change will affect living and working environments and create health threats for millions of people. For example, in the United States, 423 heat related fatalities among crop production workers occurred during 1992–2006 and this number was increasing overtime (WHO, 2015)

Heat

Heat is expected to result in heat stress, heat stroke and dehydration especially for children and elderly, cancers, increased of maternal and child diseases

thus leading to increased morbidity and mortality. Injuries and fatalities, worsening sanitation condition; pressure on the health system, wild fires, and also heat waves which are uncomfortable for everyone. For infants and young children, the elderly, and people who are already sick, they can be especially dangerous. Extreme heat can cause illnesses such as heat cramps, heat stroke, and even death. Wave in Europe caused about 50,000 deaths, and a 1995 heat wave in Chicago caused more than 600 deaths. In fact, heat waves cause more deaths in the United States every year than hurricanes, tornadoes, floods, and earthquakes combined.

What people can do about it?

People should take precautions on hot days to keep cool. Cities can also set up heat wave warning systems and air-conditioned shelters where people can cool off(EPA's CCI, 2016)

Excess Heat

This is unusually high heat arising from a high daytime temperature that is not sufficiently discharged overnight due to unusually high overnight temperature. Maximum and subsequent minimum temperatures averaged over a three-day period are compared against a climate reference value to characterize this unusually high heat in an excess heat index. This is expressed as a long term (climate-scale) temperature anomaly. The long-term climate reference value for determining the existence of a significant excess heat event has been set as the 95th percentile of observed daily temperature (single-day, average of maximum and minimum temperature in a common 9 am to 9 am period) for all days spanning the climate base period of analysis. Positive contiguous three-day average daily temperature departures from this reference value indicate a significant excess heat event or heat wave. This motivates the form of our first excess heat index (EPA USEPA, 2016).

Heat Stress

This arises from a period where temperature is warmer, on average, than the recent past. Maximum and subsequent minimum temperatures averaged over a three-day period and the previous 30 days are compared to characterize this heat stress in a second index. This is expressed as a short term (acclimatisation) temperature anomaly. Acclimatisation to higher temperatures is a feature of human physical adaptation which may take between two to six weeks, involving physiological adjustments of the cardiovascular, endocrine and renal systems 22 and 23. In this work, 30 days (about 4 weeks) has been used as the period required for acclimatization (EPA USEPA, 2016).

Excess Heat Factor

The combined effect of Excess Heat and Heat Stress calculated as an index provides a comparative measure of intensity, load, duration and spatial distribution of a heat wave event. Heat wave conditions exist when the EHF is positive. Combining the measures of Excess Heat and Heat Stress provides a measure of heat wave which has a strong signal-to-noise ratio. Low-impact heat waves register as low amplitude EHF events. As the Excess Heat and Heat Stress temperature anomalies increase, their product increases as a quadratic response to increasing heat load. Multiplying these two indices (instead of adding them) has been favoured because a similar quadratic signal is detected in high impact data. Quadratic responses to extreme heat events are noted for mortality, ambulance response and power consumption (U.S EPA, 2016).

How Heat Affects the Human Body

Human bodies dissipate heat by varying the rate and depth of blood circulation, by losing water through the skin and sweat glands, and as a last resort by panting, when blood is heated above 98.6 degrees. The heart begins to pump more blood, blood vessels dilate to accommodate the increased flow, and the bundles of tiny capillaries threading through the upper layers of skin are put into operation. The body's blood is circulated closer to the skin's surface, and excess heat drains off into the cooler atmosphere. At the same time, water diffuses through the skin as perspiration. The skin handles about 90 percent of the body's heat dissipating function. Sweating, by itself, does nothing to cool the body, unless the water is removed by evaporation, and high relative humidity slows evaporation. The evaporation process itself works this way: the heat energy required to evaporate the sweat is extracted from the body, thereby cooling it. Under conditions of high temperature (above 90 degrees) and high relative humidity, the body is doing everything it can to maintain 98.6 degrees inside. The heart is pumping a lot of blood through dilated circulatory vessels; the sweat glands are pouring liquid, including essential dissolved chemicals, like sodium and chloride onto the surface of the skin (WHO, 2011).

Heat Wave Safety Tips

Slow down. Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day. Individuals at risk should stay in the coolest available place, not necessarily indoors.

Dress for summer. Lightweight

Light-colored clothing reflects heat and sunlight, and helps your body maintain normal temperatures. Cover all exposed skin with a high SPF sun screen, and wear a wide brimmed hat to protect your face and

head.

Drink plenty of water or other non alcoholic fluids: Drink plenty of fluids even if you don't feel thirsty. Avoid coffee and tea because they contain caffeine, which increases water loss through urination. Alcoholic drinks also dehydrate by increasing urination. Soda and fruit juices contain more sugar than needed, so they aren't absorbed as easily or quickly as water or commercial sports drinks. Eat frequent small, lower protein meals (fruits, vegetables & salads).

Spend more time in air conditioned places.

Air conditioning in homes and other buildings markedly reduces danger from the heat. If you cannot afford an air conditioner, spending some time each day (during hot weather) in an air conditioned environment affords some protection. Keep your electric fans running.

Don't get too much sun. Sunburn makes the job of heat dissipation that much more difficult.

Check on the elderly, infants, young children and people with chronic health problems or disabilities. They are more vulnerable to the effects of heat. Keep pets indoors, or provide them with shade and plenty of cool water. Refill their water bowls frequently. Do not leave pets, or anyone else, in a closed, parked vehicle.

Heat disorders sunburn

The symptoms of sunburn include redness and pain. In severe cases, swelling of skin, blisters, fever and headaches can result. To treat sunburn, ointments usually work for mild cases and if blisters appear but do not break. If blisters do break, apply dry sterile dressing. More serious extensive cases should be seen by a doctor.

Heat cramps

Muscular pains and spasms due to heavy exertion. They usually involve the abdominal muscles or the legs, and can be very painful. If you are caring for a person who has heat cramps, have them stop activity and rest. Have them drink sips of water or a diluted sports drink, at the rate of one-half cup every 15 minutes. Gently stretch the cramped muscle and hold the stretch for about 20 seconds, then gently massage the muscle. Repeat if needed. If there is heavy sweating, cramps will reoccur. If the victim has no other signals of heat-related illness, they may resume activity after the cramps stop, but should avoid any strenuous exercise for at least 24 hours.

Heat cramps are muscle spasms, often in the abdomen, arms, or calves, caused by a large loss of

salt and water in the body. Heat cramps can occur from prolonged exposure to extreme heat combined with dehydration, and they commonly happen while participating in strenuous outdoor activities such as physical labor or sports(NOAA, 2007).

Heat exhaustion:

Due to prolonged and profuse sweating, the body loses large quantities of salt and water. When salt and water are not replaced, blood circulation diminishes and affects the heart, brain and lungs. With heat exhaustion, sweat does not evaporate, due to high humidity or layers of clothing, so the body is not cooled properly. Symptoms include cool, moist, pale, flushed or red skin, heavy sweating, headache, nausea or vomiting, dizziness and exhaustion. Body temperature will be near normal. Get the person to a cool place in a comfortable position. Give a half glass of cool water every 15 minutes. Remove or loosen clothing and apply cool, wet cloths. Call 9-1-1 if the person refuses water, vomits or loses consciousness. If not treated, the victim's condition will worsen; the body temperature will keep rising, possibly leading to heat stroke (U.S EPA, 2016).

Heat exhaustion is a severe illness requiring emergency medical treatment. It can occur from exposure to extreme heat over an extended period of time (usually several days), especially when combined with dehydration (U.S EPA, 2016). Extreme heat is especially dangerous because people might not recognize their symptoms as signs of a more serious condition. For example, symptoms like sweating or fatigue may just appear to be normal reactions to a hot day. People may be in more danger if they experience symptoms that alter their decision-making, limit their ability to care for themselves, or make them more prone to accidents. If untreated, heat-related illnesses can worsen and eventually lead to death. Heat can also contribute to premature death from health impacts other than those listed above. This is because extreme heat can worsen chronic conditions such as cardiovascular disease, respiratory disease, and diabetes.

Heat stroke

Is the most serious medical condition caused by extreme heat, requiring emergency treatment. Heat stroke (or hyperthermia) occurs when the body can no longer regulate its temperature, and its temperature rises rapidly—up to 106°F or higher. Heat stroke usually occurs as a progression from other heat-related illnesses, such as heat cramps or heat exhaustion. It can also strike suddenly without prior symptoms, however, and it can result in death without immediate medical attention. The victim's temperature control system, which produces sweating to cool the body, stops working. The body

temperature can rise so high that brain damage and death may result if the body is not cooled quickly. Signals include hot, red and dry skin, changes in consciousness, rapid, weak pulse, rapid, shallow breathing, very high body temperature, dilated pupils, decreased blood pressure, increasing dizziness and weakness, headache, nausea or vomiting, loss of appetite, and mental confusion. Move the person to a cool place and cool the body. Wrap wet sheets around the body and fan it. Wrap icepacks in a cloth and place them on each of the victim's wrists and ankles, in the armpits and on the neck to cool the large blood vessels. If patient starts to shiver, slow down your cooling process, as shivering produces heat. Watch for signals of breathing problems and make sure the airway is clear. Keeps the person lying down. Be prepared for convulsions, which occur with body temperatures at around 104 degrees Fahrenheit and produce great body heat.

Heat disorders have to do with a decrease in the body's ability to shed heat by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When heat gain exceeds the level the body can remove, or when the body cannot compensate for the fluids and salt lost through sweating, the temperature of the body's inner core begins to rise and heat related illness may develop. Ranging in severity, heat disorders share one common feature, the person has overexposed or over exercised for his or her age and physical condition in the existing thermal environment (CDC, 2007). Heat affects everybody! A normal body temperature for adults is around 98.6°F. When you are sick, you may get a fever with symptoms such as headache, sweating, or fatigue. Much like a fever, extreme heat stresses your body's ability to maintain its normal temperature and can result in similar symptoms (NOAA, 2007). The most common health effects (or symptoms) caused by extreme heat include the following:

Heat index/Heat disorders

Possible heat disorders for people in higher risk groups: Heat index of 130° or higher: heatstroke/sunstroke highly likely with continued exposure. Heat index of 105°- 130°: sunstroke, heat cramps or heat exhaustion likely, and heatstroke possible with prolonged exposure and/or physical activity. Heat index of 90°- 105°: sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity (NOAA, 2007).

How the National Weather Service alerts you to extreme heat conditions:

The National Weather Service in Paducah will highlight heat indices at or above 100 degrees in its

forecasts. Whenever the heat index is forecast to be at least 105 degrees, a Heat Advisory will be issued. Whenever the heat index is forecast to be at least 110 degrees for at least 2 days, an Excessive Heat Warning will be issued.

Ultraviolet (UV) exposure

Level of UV radiation reaching the earth's surface may increase due to sunnier summers, a decline in cloud cover and ozone depletion (which reduces the capacity of the ozone layer to absorb UV). This can cause skin damage and skin cancer, cataracts and disturbed immune function. However, UV exposure is also related to people's behaviour (DoH, 2002). Overall, the Department of Health (DoH) assessment predicted an extra 5,000 cases of skin cancer and 2,000 of cataract per year by 2050 (DoH, 2004).

Extreme Heat Prevention Guide

Replace Salt and Minerals

Heavy sweating removes salt and minerals from the body. These are necessary for your body and must be replaced. If you must exercise, drink two to four glasses of cool, non-alcoholic fluids each hour. A sports beverage can replace the salt and minerals you lose in sweat. However, if you are on a low-salt diet, talk with your doctor before drinking a sports beverage or taking salt tablets.

Wear Appropriate Clothing and Sunscreen

Wear as little clothing as possible when you are at home. Choose lightweight, light-colored, loose-fitting clothing. Sunburn affects your body's ability to cool itself and causes a loss of body fluids. It also causes pain and damages the skin. If you must go outdoors, protect yourself from the sun by wearing a wide-brimmed hat (also keeps you cooler) along with sunglasses, and by putting on sunscreen of SPF 15 or higher (the most effective products say "broad spectrum" or "UVA/UVB protection" on their labels) 30 minutes prior to going out. Continue to reapply it according to the package directions.

Schedule Outdoor Activities Carefully

If you must be outdoors, try to limit your outdoor activity to morning and evening hours. Try to rest often in shady areas so that your body's thermostat will have a chance to recover. If you live in an urban area, you could be at even greater risk from the effects of extreme heat. Urban areas, including big cities and smaller ones, are usually warmer than their rural surroundings because of the "urban heat island" effect. As cities develop, vegetation is often lost and more surfaces are paved or covered with buildings. Less vegetation means less shade and moisture to keep urban areas cool. Conventional roofs and pavement reflect less and absorb more of the sun's

energy, which leads to higher temperatures near these structures. Additionally, tall buildings and narrow streets can reduce air flow, further trapping the heat that gets absorbed during the day, as well as heat generated by vehicles, factories, and air conditioning vents. All these factors contribute to urban heat islands, which can worsen the impacts of climate change, particularly as more extreme heat events occur. Compared with surrounding rural areas, urban heat islands have higher daytime maximum temperatures and less nighttime cooling. Temperatures in urban areas can be 1.8–5.4°F warmer than their surroundings during the day. In the evening, this difference can be as high as 22°F because the built environment retains heat absorbed during the day. Extreme heat events are on the rise, but there are things you can do now—in your own home, workplace, or neighborhood—to reduce your current and future risks. Here are some ideas:

Be prepared at home: The best time to prepare for an extreme heat event is before it happens. Each spring; check your household's fans, air conditioners, and other cooling equipment to make sure they are in good working order. Write down a list of family, friends, and neighbors who might need assistance in an extreme heat event, and make sure you have their phone numbers. Look up the location of your nearest cooling center(s) in case you need to go there.

Be prepared in your community: If you work outdoors or in a physically demanding job without air conditioning, work with your employer to establish a committee at your workplace to develop a heat response plan. Get involved in children's school and athletic organizations to ensure that proper measures are in place for extreme heat days and outdoor athletic practices take place during the coolest part of the day.

Plant a green roof: Green roofs are gardens planted on rooftops that provide shade and reduce the temperature of the roof surface, as well as the surrounding air. On hot summer days, green roofs can actually be cooler than the air. Many kinds of buildings—commercial, residential, and industrial—can support green roofs, and green roofs can be especially useful in cities to counter the urban heat island effect. Consider building your own at home, work, or school!

Install a cool roof: A cool roof is made of materials or coatings that reflect sunlight and heat away from your home, reducing roof temperatures. This makes your home cooler, increasing your comfort and reducing the amount of air conditioning needed during hot days.

Plant trees or erect shade structures in strategic locations: Trees and vegetation that directly shade your home can lower surrounding temperatures; this can decrease the need for air conditioning, make your home more comfortable, and reduce your energy bill. Trees also protect your family's health by improving air quality, providing cooling shade for outdoor activities, and reducing your exposure to the sun.

Use cool paving materials in your driveway: If you've ever walked barefoot on hot pavement, you know it can heat up quickly in the sun. Hot pavement also transfers heat to the surrounding air, adding to the urban heat island effect. Cool pavement stays cooler in the sun than traditional pavement by reflecting more solar energy or enhancing water evaporation. Cool pavement can be created from asphalt and concrete, as well as through the use of coatings or grass paving.

Replace your old air conditioner: Old or damaged window-unit air conditioners are inefficient, meaning you're paying more money for less actual cooling ability. Don't wait until the next heat wave when supplies are likely to be low and prices high—to replace an inefficient or broken air conditioner; purchase an efficient unit before you need it (U.S EPA, 2016).

Monitor Those at High Risk

Although anyone at any time can suffer from heat-related illness, some people are at greater risk than others. Infants and young children are sensitive to the effects of high temperatures and rely on others to regulate their environments and provide adequate liquids. People 65 years of age or older may not compensate for heat stress efficiently and are less likely to sense and respond to change in temperature. People who are overweight may be prone to heat sickness because of their tendency to retain more body heat. People who overexert during work or exercise may become dehydrated and susceptible to heat sickness. People who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be affected by extreme heat. Visit adults at risk at least twice a day and closely watch them for signs of heat exhaustion or heat stroke. Infants and young children, of course, need much more frequent watching.

Adjust to the Environment

Be aware that any sudden change in temperature, such as an early summer heat wave, will be stressful to your body. You will have a greater tolerance for heat if you limit your physical activity until you become accustomed to the heat. If you travel to a

hotter climate, allow several days to become acclimated before attempting any vigorous exercise, and work up to it gradually.

Do Not Leave Children in Cars

Even in cool temperatures, cars can heat up to dangerous temperatures very quickly. Even with the windows cracked open, interior temperatures can rise almost 20 degrees Fahrenheit within the first 10 minutes. Anyone left inside is at risk for serious heat-related illnesses or even death. Children who are left unattended in parked cars are at greatest risk for heat stroke, and possibly death. When traveling with children, remember to do the following:

- Never leave infants, children or pets in a parked car, even if the windows are cracked open, to remind yourself that a child is in the car, keep a stuffed animal in the car seat. When the child is buckled in, place the stuffed animal in the front with the driver. When leaving your car, check to be sure everyone is out of the car. Do not overlook any children who have fallen asleep in the car.

Use Common Sense

Remember to keep cool and use common sense:

- Avoid hot foods and heavy meals—they add heat to your body. Drink plenty of fluids and replace salts and minerals in your body. Do not take salt tablets unless under medical supervision. Dress infants and children in cool, loose clothing and shade their heads and faces with hats or an umbrella. Limit sun exposure during mid-day hours and in places of potential severe exposure such as beaches. Do not leave infants, children, or pets in a parked car. Provide plenty of fresh water for your pets, and leave the water in a shady area (USGCRP, 2016)

WHO response

Many policies and individual choices have the potential to reduce greenhouse gas emissions and produce major health co-benefits. For example, cleaner energy systems, and promoting the safe use of public transportation and active movement such as cycling or walking as alternatives to using private vehicles could reduce carbon emissions, and cut the burden of household air pollution, which causes some 4.3 million deaths per year, and ambient air pollution, which causes about 3 million deaths every year. In 2015, the WHO Executive Board endorsed a new work plan on climate change and health. This includes:

- **Partnerships:** to coordinate with partner agencies within the UN system, and ensure that health is properly represented in the climate change agenda.
- **Awareness raising:** to provide and disseminate information on the threats that climate change presents to human health, and opportunities to

- promote health while cutting carbon emissions.
- Science and evidence:** to coordinate reviews of the scientific evidence on the links between climate change and health, and develop a global research agenda.
- Support for implementation of the public health response to climate change:** to assist countries to build capacity to reduce health vulnerability to climate change, and promote health while reducing carbon emissions.
- President's Task Force on Environmental Health Risks and Safety Risks to Children:** Working together through the task forces, the federal government seeks to understand environmental health impacts and help to ensure opportunities for the development of healthy children.
- Children are more susceptible to environmental exposures than adults owing to their developing body systems. Consequently they are more vulnerable to such exposures. There is a growing concern about the effects of climate change on children's health.
- There is need to understand how children may be exposed and how they may be affected by the human health threats posed by climate change. The President's Task Force on Environmental Health Risks and Safety Risks to Children, a federal interagency group, stood up a Subcommittee on Climate Change, which is co-chaired by NIEHS, EPA, and DHS (WHO, 2016).

Methodology

This chapter presents the sample size, sample population and the method employed in obtaining them. There is also a detail on the instruments used to obtain information for the research work, and how it was developed. There is a brief discussion on the methods of data analysis of the research data.

Research design

The study is a descriptive survey design

Area of the study

Kazaure is situated in the south western part of Jigawa state, with an area of about 500 square meters miles, it falls within the Sudan savannah zone. It is a semi-arid region and rocks are scattered all round the local government. The maximum temperature is 33°F

Sample size determination

$$\text{Sample size} = \frac{n}{+n/\text{POPULATION}}$$

$$\text{Where } N = z^2(p) \left(\frac{(100-p)}{D^2} \right)$$

P= Expected Frequency value = 79.3%

(Ojon et al, 2015).

$$D = 5\%$$

Z=1.645 with confidence level of 90%

Population= 161,494

$$\text{Therefore, } N = z^2(p) \left(\frac{(100-p)}{D^2} \right)$$

$$N = 1.645^2 \left(79.3 \left(\frac{(100-79.3)}{5^2} \right) \right)$$

$$= 2.706 \left(79.3 \left(\frac{(20.7)}{25} \right) \right)$$

$$= 2.706 \left(79.3 \left(\frac{(20.7)}{25} \right) \right)$$

$$2.706 \left(\frac{(1642)}{25} \right)$$

$$= \frac{4332}{25} = 173$$

Therefore N = 173

$$\text{Sample Size} = \frac{n}{+n/\text{POPULATION}}$$

$$= \frac{173}{1+173/161494}$$

$$= \frac{173}{1+0.001}$$

$$= \frac{173}{1.001} = 173$$

Therefore sample size = 173

Method of data collection

The data was collected by purposive sampling method with the used of structured questionnaire.

Method of data management and analysis

The data gathered was analyzed using simple percentage, frequency count and inferential statistics. The hypothesis was tested using statistical product for social solution (SPSS) version 22.0

Ethical consideration

Letter of introduction from the public and community health Department to primary health care director of the area for permission to conduct the research study was obtained accordingly.

Results:

This includes the analysis of the survey and data generated from the respondents were analyzed using SPSS version 22.0. The researcher shared 173 questionnaires to the respondent, which 12 was loss and 161 were retrieved.

Socio demographic Data**Table1. Age distribution**

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-23yrs	16	9.9	9.9	9.9
	24-29	23	14.3	14.3	24.2
	30-35	37	23.0	23.0	47.2
	36-41	41	25.5	25.5	72.7
	42-47	30	18.6	18.6	91.3
	48-53	7	4.3	4.3	95.7
	54-59	5	3.1	3.1	98.8
	60-65	2	1.2	1.2	100.0
	Total	161	100.0	100.0	

From table 1, the age distribution of the respondents showed that ages 18-23yrs had a frequency distribution of 16(9.9%) and 24-29 years had 23(14.3%), which 30-35 years had 37(20.0%) and 36-41 years had 41(25.5%), 42-47yrs had 30(18.6%), in which 48-53yrs had a frequency distribution of 7(4.3%) and 54-59 years had 5(3.1%), 60-65yrs had 2(1.2%). Therefore, 36-41 yrs had a total highest frequency of 41(25.5%), followed by 30-35yrs with 37(20.0%), and 60-65(2(1.2%)) is lowest frequency under this distribution.

Table2. Gender Distribution

Gender	Frequency	%	Valid %	Cumulative %
Valid	Male	98	60.9	60.9
	Female	63	39.1	39.1
	Total	161	100.0	100.0

The distribution of gender under table2 showed that males had a highest frequency distribution of 98(60.9%) and females lower frequency of 63(39.1%).

Table3. Qualification

	Qualification	Frequency	%	Valid %	Cum. (%)
Valid	Non formal Education	19	11.8	11.8	11.8
	O level	26	16.1	16.1	28.0
	degree/equivalent	47	29.2	29.2	57.1
	A level	45	28.0	28.0	85.1
	Post-graduate	24	14.9	14.9	100.0
	Total	161	100.0	100.0	

Table 3, showed the qualification status of the respondent in Kazaure community, in which Non-formal education was 19(11.8%), O level had a frequency distribution of 26(16.1%), and degree/equivalent had 47(29.2%), A level was 45(28.0%), and post -graduate was 24 (14.9%). This showed that degree/equivalent had a highest frequency distribution of 47(29.2%), followed by A level with 45(28.0%), and Non formal education had a frequency of 19(11.8%).

Table4. Religion

Religion	Frequency	%	Valid %	Cumulative %
Valid	Islam	106	65.8	65.8
	Christianity	46	28.6	28.6
	Others	9	5.6	5.6
	Total	161	100.0	100.0

The above table showed the religions distribution of the respondents. Islam was 106(65.8%), and Christianity had 46(28.6), others has 9(5.6%). This showed that Islam had a frequency distribution of 106(65.8%), followed by Christianity with 46(28.6%), and others with the frequency of 9(5.6%).

Table 5. Tribe

Tribe	Frequency	%	Valid %	Cumulative %
Valid	Hausa	83	51.6	51.6
	Fulani	49	30.4	82.0
	Igbo	21	13.0	95.0
	Yoruba	8	5.0	100.0
	Total	161	100.0	100.0

Table 5 showed that Hausa had a Frequency distribution of 83(51.6%), and Fulani Tribal group had 49(30.4%), Igbo 21(13.0%), and Yoruba had 8(5.0%). This showed that Hausa Tribal group had a frequency of 83(51.6%), followed by Fulani 49(30.4%), 8(5.0%) for Yoruba.

Table 6. Occupational Status

	Occupation	Frequency	%	Valid %	Cumulative %
Valid	civil servant	91	56.5	56.5	56.5
	Self employee	70	43.5	43.5	100.0
	Total	161	100.0	100.0	

Table 6, showed that Civil servants among the respondents had a frequency distribution of 91(56.5%), and Self employed had 70(43.5%). This showed that civil servants had a highest frequency distribution of 91(56.5%), and self employed with the least frequency of 70(43.5%) exhaustively.

Table 7: General Environmental concern for Heat stress

		Frequency	%	Valid %	Cumulative %
Valid	Traffic/congestion	18	11.2	34.0	34.0
	Climate change	30	18.6	56.6	90.6
	over population(of the earth by human)	5	3.1	9.4	100.0
	Total	53	32.9	100.0	
	extreme heat	108	67.1		
Total		161	100.0		

Table 7 showed the most environmental issues that were most of concern to the people in the community. Traffic congestion was 18(11.2%), and Climate change was 30(18.6%), Overpopulation had 5(3.1%) and extreme heat was 108(67.7%). This showed that extreme heat had the highest concern in the environment with 108(67.1%), followed by Climate change with 30(18.6%), and over population with the least concern with a frequency of 5(3.1%).

Table 8. In your view has Heat stress ever affected your Health?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	146	90.7	90.7	90.7
	No	15	9.3	9.3	100.0
	Total	161	100.0	100.0	

The above view of the respondent showed that People in the community with 146(90.7%) ever believed heat stress affected their Health, whereas 15(9.3%) says no, that heat stress does not affect their Health.

Table 9. Has heat stress ever affected the health of any of your family or friend?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	146	90.7	90.7	90.7
	No	15	9.3	9.3	100.0
	Total	161	100.0	100.0	

146(90.7%) people in the community say Yes; that heat stress ever affected their Family or friends, while 15(9.3%) says no.

Table. 10 Apart from effects on people's health, are you aware of any other effects

		Frequency	%	Valid %	Cumulative %
Valid	Yes	116	72.0	72.0	72.0
	No	45	28.0	28.0	100.0
	Total	161	100.0	100.0	

Table 10 Shows that People with 116(72.0%) believed that apart of Health effect of heat stress on people's Health, they are aware of any other effect. 45(28.0%) respondent were not aware of any other effect.

Table11. If yes Please indicate

		Frequency	%	Valid %	Cumulative %
Valid	it usually affect social movement, must especially for market and industrial places	116	71.6	72.0	72.0
	No	45	27.8	28.0	100.0
	Total	161	99.4	100.0	
Missing	System	1	.6		
Total		162	100.0		

The above table shows that people who were aware of any other effect were 116(7.6%) they believed that Heat stress affect social movement, in market and industrial place. But 45(27.8%) respondents were not aware of these effects.

Table12. Have you ever experienced extreme heat stress in the past 4 years?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	136	84.5	84.5	84.5
	No	25	15.5	15.5	100.0
	Total	161	100.0	100.0	

Table12 showed that 136(84.55%) of the respondents had experienced heat stress in the past 4 years, and 25(15.5%) did not experience it for the past 4yrs.

Table13. If yes, does it result in death among Children and elderly?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	75	46.6	46.6	46.6
	No	86	53.4	53.4	100.0
	Total	161	100.0	100.0	

75(46.6%) of the respondent believed extreme heat stress does not result in death among children and elderly. And 86(53.4%) believed that extreme Heat in the past 4 years resulted in death among children and elderly.

Table14. If yes, does Government provides procure measures in the community?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	39	24.2	24.2	24.2
	No	122	75.8	75.8	100.0
	Total	161	100.0	100.0	

122(75%) respondents believed that Government did not provide any measure for the effect, whereas 39(24.2%) respondents said that Government had provided measures.

Table15. If yes please indicate

		Frequency	%	Valid %	Cumulative %
Valid	It stops community youth and elders from rampant bush burning to adjust against climate change.	22	13.6	13.7	13.7
	No	139	85.8	86.3	100.0
	Total	161	99.4	100.0	
Missing	System	1	.6		
Total		162	100.0		

Table 15 showed that 22(13.6%) of the respondents said that Government had stopped youth and elders from rampant bush burning to adjust against climate change. Whereas 139 (85.8%) respondents believed that Government did not provide such measures.

Table16. What do you know about Heat stress?

		Frequency	%	Valid %	Cumulative %
Valid	Heat stress results as change in heat temperature that usually affect our Health	2	1.2	1.2	1.2
	Heat stress is change in heat temperature that drives extreme heat and causes death among children & adult	159	98.8	98.8	100.0
	Total	161	100.0	100.0	

Table 16 shows a different definition of heat stress by the respondent. 2(1.2%) respondent defined heat stress as change in heat temperature that usually affects their health. And 159(98.8%) respondents viewed heat stress as in heat temperature that derives extreme heat and causes death among children & adult.

Table 17. Where have you heard about Heat stress? Please ticks as you feel apply:

		Frequency	%	Valid %	Cumulative %
Valid	Television	47	29.2	29.2	29.2
	Radio	75	46.6	46.6	75.8
	school/collage/university	6	3.7	3.7	79.5
	Friend/family	28	17.4	17.4	96.9
	Environmental organizations	5	3.1	3.1	100.0
	Total	161	100.0	100.0	

Table 17 showed the media source where the individual of the community heard issues pertaining to heat stress. 47(29.2%) from television, while Radio had a frequency of 75(46.6%), School/College/University had 6(3.7%) and Friend/family had a frequency of 28(17.4%) Environmental organization had 5(3.1%). This showed that those who heard issues of heat stress from radio had the highest frequency of 75(46.6%), followed by Television with 47(29.2%), and Environmental organization had the least frequency distribution of 5(3.1%)

Table 18. What do you think can cause Heat stress?

		Frequency	%	Valid %	Cum. %
Valid	industrial companies and Bush burning	87	54.0	54.0	54.0
	High heat temperature, burning of fossils, depression of ozone layer	74	46.0	46.0	100.0
	Total	161	100.0	100.0	

Table 18 showed the causes of heat stress from the respondents in the Kazaure community. It also indicates that 87(54.0%) respondents believed that Industrial companies, and bush burning were the causes of Increase in heat stress. And 74(46.0%) respondents believed that high heat temperature, burning of fossils, depression of ozone layer were the causes of heat stress.

Table 19. Do you think Heat stress is something that is affecting or is going to affect you personally?

		Frequency	%	Valid %	Cum. %
Valid	Yes	147	91.3	91.3	91.3
	No	14	8.7	8.7	100.0
	Total	161	100.0	100.0	

This table showed that 147(91.3%) of the respondents believed that heat stress is something that is affecting or going to affect them personally. And 14(8.7%) believed that heat stress is nothing that is affecting them or going to affect them personally.

Table 20. If yes, in what way is it affecting you or going to affect you?

		Frequency	%	Valid %	Cum. %
Valid	Heat stress can cause cancer, cardiovascular disease	81	50.3	50.3	50.3
	it also cause death among children	80	49.7	49.7	100.0
	Total	161	100.0	100.0	

Table 23. Who do you think should have the main responsibility for tackling extreme heat temperature? Please tick one below:

		Frequency	%	Valid %	Cumulative %
Valid	International organizations	34	21.1	21.1	21.1
	National Government	44	27.3	27.3	48.4
	Local Government	15	9.3	9.3	57.8
	Business and industry	41	25.5	25.5	83.2
	Environmental group/ Lobby group	27	16.8	16.8	100.0
	Total	161	100.0	100.0	

Table 23 showed different bodies responsible for tackling extreme heat temperature. 44(27.3%) as the highest frequency believed that National Government are the main arm of government responsible for tackling Heat temperature, and 41(25.5%) respondents believed that Business and industries are the main responsible bodies. But 34(21.1%) respondents believed that International organization in this modern world are the main responsible body, 27(16.8%) respondents believed that Environmental group/lobby group were the main group responsible for tackling Heat temperature. And finally 15(9.3%)

Table 21. Do you think anything can be done to tackle extreme Heat temperature?

		Frequency	%	Valid %	Cumulative %
Valid	Yes	42	26.1	26.1	26.1
	No	119	73.9	73.9	100.0
	Total	161	100.0	100.0	

Table 21. Showed 119(73.9%) of the respondents believed that extreme Heat temperature cannot be tackle. And 42(26.1%) of the respondents believed that extreme heat temperature can be tackled.

Table 22. If yes what do you think can be done to tackle it?

		Frequency	%	Valid %	Cum. %
Valid	Controlling of factories for time work. people of community should also stop rampant bush burning	42	25.9	26.1	26.1
	No	119	73.5	73.9	100.0
	Total	161	99.4	100.0	
Missing	System	1	.6		
Total		162	100.0		

respondents viewed Local govt's responsible body for tackling heat temperature increase.

From table 22, 42(25.9%) respondent believed that extreme heat can be tackled by controlling factories, and stopped people from rampant bush burning. But 119(73.5%) respondents do not believe that extreme heat can be tackle in this modern world.

Table 24a We can all do our best to reduce the effect In Increase of heat temperature.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	64	39.8	39.8	39.8
	strongly agree	29	18.0	18.0	57.8
	Disagree	60	37.3	37.3	95.0
	strongly disagree	8	5.0	5.0	100.0
	Total	161	100.0	100.0	

Table 24a showed that 64(39.8%), 29(18.0%) agreed and strongly agreed, 60(37.3%) disagreed that there is no way they can do in reducing the effect of increase in heat temperature, which 8(5.0%) strongly disagreed.

Table 24b. Increase in Heat temperature is inevitable because of the way modern society work.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	85	52.8	52.8	52.8
	strongly agree	32	19.9	19.9	72.7
	Disagree	39	24.2	24.2	96.9
	strongly disagree	5	3.1	3.1	100.0
	Total	161	100.0	100.0	

85(52.8%), 32(19.9%) agreed and strongly that increase in heat temperature is inevitable because of the way modern society works, but 39(24.2%), 5(3.1%) disagreed and strongly disagreed that heat temperature is inevitable. This showed that 44(27.3%) believed that heat temperature is inevitable in this world.

Table 24c. Extreme heat is just a natural fluctuation in earth temperature.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	61	37.9	37.9	37.9
	strongly agree	29	18.0	18.0	55.9
	Disagree	67	41.6	41.6	97.5
	strongly disagree	4	2.5	2.5	100.0
	Total	161	100.0	100.0	

Table 24c. Showed that 61(37.9), 29(18.0%) agree and strongly agreed that extreme heat is just a natural fluctuation, but 67(41.6%), and 4(2.5%) disagree and strongly disagree that extreme heat is a natural rather than man-

Table24d. The Government should provide incentives for people to look after the environment.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	81	50.3	50.3	50.3
	strongly agree	16	9.9	9.9	60.2
	Disagree	55	34.2	34.2	94.4
	strongly disagree	9	5.6	5.6	100.0
	Total	161	100.0	100.0	

The above table showed that 81(50.3%), 16(9.9%) of the respondents agreed and strongly agreed that Government should provide incentive for people to look after the environment, whereas 55(34.2%), and 9(5.6%) of the respondents disagreed and strongly disagreed.

Table24e It is too late to do anything about extreme heat temperature.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	98	60.9	60.9	60.9
	strongly agree	6	3.7	3.7	64.6
	Disagree	51	31.7	31.7	96.3
	strongly disagree	6	3.7	3.7	100.0
	Total	161	100.0	100.0	

The table above showed that 98(60.9%), and 6(3.7%) agreed and strongly agreed that it's too late to do anything about extreme heat, but for 51(31.7%), and 6(3.7%) of the respondent believed that it's not late to do something about extreme heat in our community.

Table24f. Radical changes to society are needed to tackle heat stress.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	151	93.8	93.8	93.8
	strongly agree	2	1.2	1.2	95.0
	Disagree	8	5.0	5.0	100.0
	Total	161	100.0	100.0	

Table 24f showed the need for radical changes to tackle extreme heat in our community. 151 (93.8%), and 2 (1.2%) are in line with the above opinion, but 8 (5.0%) disagreed with the opinion.

Table24g. People are severely suffered because of increase in heat temperature.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	46	28.6	28.6	28.6
	strongly agree	27	16.8	16.8	45.3
	Disagree	56	34.8	34.8	80.1
	strongly disagree	32	19.9	19.9	100.0
	Total	161	100.0	100.0	

The table above showed that 46 (28.6%), and 27 (16.8%) agreed and strongly agreed that people are suffering because of increase in heat temperature. But 56 (34.8%) were contrary to the above opinion.

Table24h. The government is not doing enough to tackle extreme heat temperature.

		Frequency	%	Valid %	Cumulative %
Valid	Agree	92	57.1	57.1	57.1
	strongly agree	3	1.9	1.9	59.0
	Disagree	53	32.9	32.9	91.9
	strongly disagree	13	8.1	8.1	100.0
	Total	161	100.0	100.0	

Table 24h showed that 92(57.1%) and 3(1.9%) of the respondents agreed and strongly agreed that Government was not doing enough to tackle extreme heat temperature. But 53(32.9%), and 13(8.1%) respondents disagreed and strongly disagreed with the above opinion.

Regression

ANOVA^a

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.003	8	.375	3.149	.003 ^b
	Residual	18.115	152	.119		
	Total	21.118	160			

There is a positive strong significant association between environmental concern and increase health impact ($P=0.003$, $F=3.149$). Therefore, the null hypothesis was rejected.

Regression

ANOVA^a

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.916	3	3.639	30.654	.000 ^b
	Residual	18.637	157	.119		
	Total	29.553	160			

There is a positive strong significant association between government interest on extreme heat and increase of heat stress among children and other people of Kazaure LGA ($P<0.05$, $F=30.654$). Therefore, the null hypothesis was rejected

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.886	.148		5.977	.000
	a13 If yes, does it result in death among Children and elderly?	.510	.058	.593	8.735	.000
	a9 Has heat stress ever affected the health of any of your family or friend?	.080	.096	.054	.838	.403
	a8 In your view has Heat stress ever affected your Health?	.002	.098	.001	.018	.986

- a. Dependent Variable: a14 If yes, does Government provides procure measures in the community?

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2	2.425	23.555	.000 ^b
	Residual	158	.103		
	Total	160			

a. Dependent Variable: a12 Have you ever experience extreme heat stress in the past 4 years?

b. Predictors: (Constant), a9 Has heat stress ever affected the health of any of your family or friend?, a8 In your view has Heat stress ever affected your Health?

There is a positive strong significant association between extreme heat and increase of health impact among people in Kazaure LGA ($P<0.05$, $F=23.555$). We reject the null hypothesis and accept the alternate hypothesis that states that there is a significant association between extreme heat and increase of health impact among people in Kazaure LGA.

Discussions of finding

Socio demographic data on heat stress showed that 36-41yrs had frequency of 41(25.5%), and 60-65 has 2(1.2%). This showed that respondents under this study were not significantly prone to the impact of heat stress. Some elderly of 60 – 65yrs had 2 (1.2%). In accordance with the findings by WHO (2015). This showed that, there is increasing evidence of greater vulnerability of specific group such as poor and the elderly people in all countries. The socio demographic data showed that respondents had a high level of knowledge in tackling the impact of increase in heat and temperatures. Adequate AR4(2007) supported that knowledge contributed in many ways to tackling the impact of increase in heat temperature, they also viewed that a thorough exploration of different data bases and search engines as carried out and retrieved by pub med, Lund University's search engine summons, and Scopus were vital. Further environmental believes and culture of the people in community can influence them by limiting themselves in tackling the impact of Natural fluctuations. WHO (2015) supported that individuals and population behavior is link to the difficulties in assessing the impact of climate change on Health. It is also clear that occupational status of an individual communities might reflect the level of control in extreme heat stress. In line with WHO (2015) Climate change in heat temperature is linked with the prevalence's, distribution, and severity of known occupational hazards.

Furthermore, The result obtained from the study revealed that most communities believed that heat stress is effecting their life, and that people would do their best in reducing the effect of increase of heat temperature. This show a positive strong association between environmental concern and increase of Health impact ($P = 0.003$, $F = 3.149$), in line with US EPA (2016) previous findings which revealed that environmental concern and control in heat temperature is significantly related, they stated further that children's school and athletic organizations should ensure that proper measure is in place for extreme heat days and outdoors. The study also revealed that Kazaure Community believed that Government was not providing any measure in the community, while some believed that industrial

companies and bush burning had contributed in the cause of heat stress. Federal Government had direct link to seek to understand environmental Health impact and help to ensure opportunities for the development of Healthy children and elders. This was also supported by Robine and Cheuq et al (2014) supported that Government interests and control of high extreme climate event are issues addressed in AP4.

However, The study also revealed that many people agreed that extreme heat was affecting their health, while some also disagreed that heat stress has affected their family and friends. There is a significant association between extreme heat and increase of Health impact among people of Kazaure of community ($P<0.05$, $F = 23.555$). Robine and Cheuq et al (2014) in the previous findings supported that high atmospheric temperature related to heat stress, which causes temporary modification in lifestyle and may have adverse Health consequences for a population. US EPA (2016) stated further that heat exhaustion and heat stroke were significantly related, they stated that If heat exhaustion is not treated, the victim's condition will worsen; the body temperature will keep rising, possibly leading to heat stroke. They stated exhaustively that heat stress has a significant association with cardiovascular diseases, respiratory diseases, and diabetes; therefore impacting on human Health. NOAA (2007) heat affects everybody, and that, a normal body temperature for adult is around 98.6°F but when sick, fever with other symptoms such as headache, sweating, and fatigues thus occur.

Conclusion

In conclusion, climate change increased in heat temperature which causes a varying factors which impacts on human Health thus causing disease such as cancer, cardiovascular disease, heat exhaustion i.e. headaches, nausea or vomiting, dizziness, and exhaustion, heat cramp, and cerebro-spinal meningitis (CSM), these factors needed to be addressed and provided with immediate preventive measures in protecting against increased morbidity, and mortality.

Recommendations

Monitoring those who are at high risk: in this regard, like children, pregnant mother, and elderly persons should be at level of concern, because they are mostly at risk during climatic change and extreme heat stress. Infants and young children are sensitive to the effects of high temperatures and rely on others to regulate their environments and provide adequate liquids, People aged 65 or older may not compensate for heat stress efficiently and are less likely to sense and respond to change in temperature, People who are overweight may be prone to heat sickness because of their tendency to retain more body heat, People who overexert during work or exercise may become dehydrated and susceptible to heat sickness., People who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be affected by extreme heat.

Use of good air conditioner: during excess of heat temperature, and heat stress; as the use of good air conditioner would help individual to manage the heat stress.

Do not always live in urban places: Whenever there is increase in heat temperature, peoples living in urban places are more likely to suffer heat cramp and heat exhaustion. Therefore migration to rural area where there is no population density, and as well over crowded of populations will be helpful.

Avoid hot food and heavy meals: too much of taking food during summer seasons without exercise can increase the risk of diabetes and other disease most especially for over-weighted people. Taking of excessive fluid during this season can as well help in replacing the loss of body fluid.

Adjustment to the Environment: Awareness that any sudden change in temperature, such as an early summer heat wave, will be stressful to the body, thereby requiring greater tolerance for heat. Limit your physical activity until you become accustomed to the heat. If you travel to a hotter climate, allow several days for you to become acclimated before attempting any vigorous exercise, and work up to it gradually.

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PERCEPTION OF THE ROLE OF TRADITIONAL HEALERS IN PRIMARY HEALTH CARE

O. A. Ogunyewo, MSc [n], MSc [Med Soc], RN
Lecturer, Department of Nursing Science,
University of Jos.

D. K. Ajio, MSc [N], RN
Lecturer, Department of Nursing Science,
University of Jos.

F. Y. Lekke, Med [G & C], RN / RM
Lecturer, School of Nursing / Midwifery
Gombe.

ABSTRACT

The aim of this study was to examine the contributions of traditional healers towards the activities of Primary Health Care. Primary Health Care as basic care predated the contemporary times complex health care delivery services. It became an official cornerstone of nation's health care delivery or when its birth was heralded at Alma Ata Declaration in 1978. The health practices in ancient Egypt, early Hebrew society, and Greek era were brought to the fore. The WHO position on the importance of traditional healers in community's health care practices was enunciated. Relevant literature on the advent of Primary Health Care, role theory, perception, and the traditional healers in the context of health care delivery was reviewed. The necessary empirical studies were retrieved and reviewed for this purpose. The participants in the study included 53 nurses and 42 doctors. Likert scale was used in eliciting responses used in the testing of the hypotheses. The result of the hypothesis shows that there was no statistically significant difference between the perception of nurses and doctors about the role of traditional healer in PHC. Besides, the result shows that traditional healers' role is in congruence with the principles of PHC such as availability, affordability and use of locally available technology.

Introduction

Health is a state of complete physical, mental and social well being, and not merely the absence of disease or infirmity (WHO) Before the advent of primary health care in these contemporary times, community health approach was prevalent in the ancient times as this could be traced back to the period of Egyptian health practices, Hebrew Mosaic law, the glory of Greece, the Roman Empire, dark ages, medieval period.

In the Egyptian times, the papyrus discovered by Edwin Smith indicated the early use of prescriptions, particularly of opium, minerals, and root drugs. Herodotus in the fifth century B.C. described the hygienic customs of the Egyptians. Personal cleanliness, frequent baths, and simple dress were emphasized (Anderson, 1973).

Early Hebrew society contributed greatly to the advancement of community health. The first practices of community health were the segregation of lepers, as recorded in Leviticus 14 of the Holy Bible. The Mosaic Law also encompassed many subjects including health, communicable disease control; segregation of lepers; fumigation; decontamination of buildings, protection of water suppliers; disposal of wastes, protection of food; and sanitation of camp site (Anderson 1973). The Greek era witnessed physical aspects of personal health. These included: games, gymnastics, and other exercises were directed towards the development of physical

strength, endurance, dexterity, and grace. During Eastern Roman Period, which lasted for about 10 centuries, public sanitation was promoted through the construction of paved streets and gutters (Anderson 1973). The World Health Organization (WHO) 1978, recommended that Primary Health Care should include at least the following components.

- i) Education concerning prevailing health problems in the community.
- ii) Promotion of food and nutrition
- iii) Supply of adequate potable water and basic sanitation.
- iv) Provisions of immunization services against major infectious diseases.
- v) Treatment of common diseases and injuries
- vi) Provision of maternal and child health care including family planning.
- vii) Promotion of mental health.
- viii) Provision of essential drugs.
- ix) Control of locally endemic diseases.

WHO (1978) further analyzed that traditional healers and birth attendants were found in most societies. They are often part of the local community, culture and traditions, and continue to have high social standing in many places, exerting considerable influence on local health practices. With the support of the formal health system, these indigenous practitioners can become important allies in organizing efforts to improve the health of the community. Some communities may select them as community health workers. It is therefore worthwhile

exploring the possibilities of engaging them in primary health care and training them accordingly. From the above statement, there is a clear indication that there is a role for traditional healers to play in the successful implementation of primary health care.

Statement of the Problem

A lot of problems have arisen since the inception of primary health care as a global means of achieving health for all by year 2000 AD. One of such problems is structural, which has to do with the role of traditional healers in primary health care since the orthodox health professionals are wary of collaborating and cooperating with them. Traditional healers are often part of the local community, culture and tradition, (WHO, 1978). WHO (1978) indicated that with the support of the formal health system, these indigenous practitioners could become important allies in organizing efforts to improve the health of the community. To this end, a need arises to examine the perception of their role by nurses and doctors in order to engender the delivery of qualitative health care services to the people through cooperation and collaboration.

Theoretical/Conceptual Framework

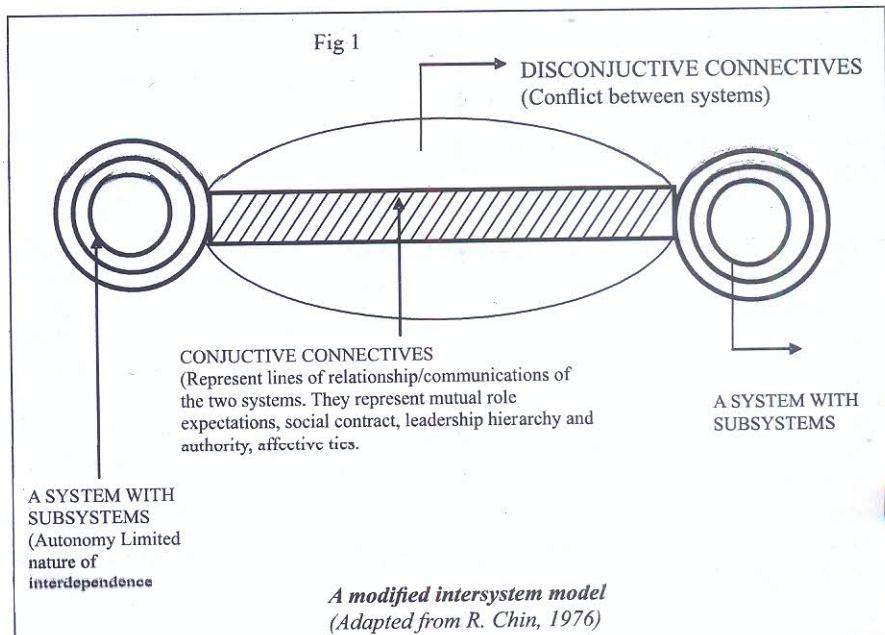
Intersystem Model

Chin (1976) describes intersystem model as involving two open systems connected to each other. The essential of this is connectives. Connectives represent the lines of relationship of the two systems. Connectives tie together parts (mechanics) or imbedded in a web of tissue or of the separate organs (biology). Connectives in an industrial establishment are defined lines of communication, or the leadership hierarchy and authority of the branch plants, or they represent the social contract entered into by a therapist and a patients, or mutual role expectations of consultant and client, or the affective ties between family members. These are conjunctive connectives. Also there is conflict between labour and management, teenage gang wars, race conflicts, and negative emotional responses to strangers. These are disjunctive connectives.

The intersystem model exaggerates the virtues of autonomy and the limited nature of interdependence of the interactions between the connected systems. This model is applicable to problems of leadership, power, communication, and conflict in organizations;

inter group relations, and international relations. The intersystem model leads one to examine the inter-dependent dynamics of interactions both within and between the units.

Hypothesis



The hypothesis states that there will be no statistically difference between the perception of nurses and doctors about the activities of traditional healers in primary health care.

Method of Literature Review

The literature on the perception of role of traditional healers in primary health care was reviewed. This included the review of literature on the perception, role theory, primary health care, and the traditional healers contributions in the community health. Empirical studies on the principles of PHC, and the essence of collaboration and co-operation between two groups of health care system were carefully selected for a systematic review to meet the purpose of the study. The participants were qualified nurses and doctors working in general hospitals and primary health centers constituting the Abeokuta and Ijebu-Ode health zones.

Methodology

Setting of the Study

This study was carried out in Ogun-State of Nigeria. The State came into being in 1976. It lies within the tropics, bounded in the west by the Benin Republic in the South by Lagos state and the Atlantic Ocean, in the East by Ondo State and in the North by Oyo State. It covers about 16,409.26sq kilometers area with the state capital located at Abeokuta. The 1987 estimated

population was 3,039,963. The state is an heterogeneous one peopled predominately by the Egbas, Egbados (Yewas), Awories, Eguns, Ijebus and Remos, and belong (in the main) to the Yoruba ethnic group.

Study Design

The study is descriptive in character. To collect the necessary data for the study, a questionnaire was built with open and closed questions. The questions were intended to collect data for the characterization of the sample [age, sex, number of years of professional exercise] and about the role of traditional healers in PHC and on the areas of collaboration with the traditional healers.

Sample

The sample was drawn from among the nurses and doctors in primary health centers and general hospitals constituting Abeokuta and Ijebu-Ode health zones.

Sampling Technique

Purposive sampling methods was used to select health zones. These zones were purposively chosen as they are cosmopolitan in nature coupled with the fact that they are the two largest health zones in the state. Convenient sampling methods was used in administering instrument to the respondents. One hundred questionnaires were given out, 95 were duly completed out of which 53 were completed by Nurses while 42 were completed by Doctors. These questionnaires were analyzed using both descriptive and inferential statistics.

Results

Table 1: Sex Distribution of Nurses and Doctors

	NURSES Frequency	[N=53] %	DOCTORS Frequency	[N=42] %
Male	6	11	32	76
Female	47	89	10	24
Total	53	100	42	100

Table 1 shows that 89% among Nurses are female while 11% are male. For doctors, 76% and 27% are male and female respectively.

Table 2: Age Distribution of Respondents

	NURSES Age [yrs] Frequency	N=53 %	DOCTORS Frequency	N=42 %
Less than 25	2	4	6	14
26-35	19	36	27	64
36-45	26	49	7	17
Above 45	6	11	2	5
Total	53	100	42	100

Table 2 reveals the age distribution of the respondents. The majority of the Nurses (85%) fall with age range of 26-45 years while respondents (11.3%) are above 45years and 3.8% are below 25years. For doctors,81% fall within the range of 26-45years while 14.3% and 4.8% of the respondents fall within less than 25years and above 45years respectively.

Table 3: Educational Level

	Nurses Frequency	N=53 %	Doctors Frequency	N=42 %
RN/RM	51	96		
RN/RM diploma qualifications	1	2		
BSc (Nursing)	1	2		
MBBS			38	90
MSc/ Postgraduate Certificates			4	10
Total	53	100	42	100

Table 3 shows the orthodox care giver respondents' educational level. 96% of Nurse respondents have RN/RM while 2% have RN/RM in addition to other diploma qualifications in Nursing, and 2% have bachelor's degree. 90% among doctors have basic medical degrees while 10% have postgraduate certificates/degrees.

Table 4: Current Professional Status

	Nurses Frequency	N=53 %	Doctors Frequency	N=42 %
Staff nurse/ midwife	17	32		
Nursing officer	9	17		
Senior nursing officer	7	13		
Principal nursing officer	12	22		
Asst chief nursing officer	4	8		
Asst director of nursing	1	2		
No responses	3	6		
House officer			12	29
Youth corper			1	2
Medical officer			18	43
Registrar			7	17
Consultant			4	9
TOTAL	53	100	42	100

Table 4 reflects current professional status. For nurses, 32% are of staff nurses/midwife status, 17% are nursing officers, 13% are senior nursing officers, 22% are principal nursing officers and 2%, assistant director status. 29% of doctors are house officers. 93% are medical officers of different grades, 17% are registrars, 9% are consultant and 2%, a youth corper.

Table 5: Professional Experience

	Nurses	N=53	Doctors	N=53
Experience (yrs)	Frequency	%	Frequency	%
Less than 5	13	24	27	64
6-10	5	9	6	14
11-15	4	8	6	14
16-20	20	38	3	7
21-25	7	13		
26-30	2	4		
Above 31	1	2		
No response	1	2		
Total	53	100	42	100

Table 5 reveals respondents' professional experience. 38% of the nurses fall within 16-20 years, 24% fall within less than 5 years, 19% are within 21 and above. For doctors, 64% fall within less than 5 years; 14% fall within 5-10 years and 11-15 years, and 7% are within 16-20 years.

Table 6: Other Items

S/N		Nurses (N=53)				Doctors (N=42)	
		No	Yes	No response	No	Yes	No response
1	Have you been your clients?	45 (85%)	5 (9%)	3 (6%)	36 (86%)	6 (14%)	
2.	Have you referred cases to them before	49 (92%)	1 (2%)	3 (6%)	39 (93%)	3 (7%)	
3.	Can you collaborate with traditional healers in line with WHO recommendation	29 (55%)	20 (38%)	4 (8%)	22 (52%)	19 (45%)	1 (2%)
4.	Should they be integrated into PHC	47 (89%)	3 (6%)	4 (8%)	39 (93%)	3 (7%)	

Hypothesis Result

The result using t-test ($p>0.05$) shows that there was no statistically significant difference between the perceptions of nurses and doctors about the activities of traditional healers in primary health care components ($+ cal = 0.13$, $+ tab = 1.998$, $df = 93$, $P < 0.05$).

Discussion

A close examination of the demographic data reveals that the majority of nurses involved in this study are female while the majority of doctors are male. This underscores the gender stereotyping in each of the professions. The higher proportion of nurses were married while in case of the doctors the reverse is the case. On the test items measuring the perception of doctors and nurses about the role of traditional healers in primary health care, the orthodox practitioners disagreed on most of the items on PHC components scale.

On the item measuring the activities of traditional healers in maternal and child health, and family planning, an appreciable number of the respondents

agreed (Nurses 36%, doctors 33%). This finding is supported by a study carried out on traditional birth attendant in Mexico. It was discovered that the traditional birth attendants are an essential part of health care especially in small rural communities where they attend approximately 45% of all deliveries (Canney et al, 1996). On the issue of their relevance in the primary health care implementation 49% of nurses respondent agreed contrary to 43% who disagreed. The disagreement on the part of the orthodox practitioners borders on the concept of role dissension, which entails disagreement of role behaviours polarized, where there is gravitation of two opposing camps of no agreement. This scenario of role dissension informed the editorial of journals of the society of health, Nigeria arguing that it would be unrealistic for any orthodox health practitioners to pretend that these people (traditional healers) were not performing some positive medical and health services among many people in both urban and rural areas of Nigeria.

On the items the use of locally available resources, majority (72%) of nurses agreed. By the same token, 71% of doctors agreed to the above item. This finds support in Sofowora (1984) whose study revealed that the practitioners of traditional medicine when his study revealed that the practitioners of traditional medicine usually come from the society in which they live, and are competent to provide health care by using vegetable, animal, mineral substances and certain method.

In terms of accessibility and affordability, 51% of nurses and 69% of doctor agreed that the traditional healers are rated/scored higher than them. Accessibility as a factor is determined by the practitioners having the good grasp of the respective communities' cultural practices and value system. This view finds support in Akerele (1983) who observed that traditional medicine relates to man's whole desire for spiritual and artistic fulfillment, and it represents the sum total of practices, measures, ingredients, and procedures of all kinds.

This view finds support in Owumi (1993) who indicated that research findings in Nigeria reveal that about 75% of the population utilize traditional medicine due partly to the fact that it is highly accessible, affordable and acceptable to the generality of the population.

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KNOWLEDGE AND UTILIZATION OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) AMONG HEALTH WORKERS IN BOMADI LGA OF DELTA STATE

Joseph Tamar Enkemimiweremi
 Depart. of Public & Community Health,
 College of Health Sciences,
 Novena University, Ogueme,
 Delta State

In collaboration with:

Health Research Institute
 Nic Maurice Colleges of Health,
 Management, Sciences & Technology,
 Amamong, P.M.B 1006 Okobo, Okobo Local
 Government Area, Akwa Ibom State.

ABSTRACT

This study investigates the knowledge and utilization of ICT among health workers in Bomadi local government area of Delta State. And in so doing four research questions were formulated and three hypothesis which guided the study. The research design adopted for this study was a cross sectional descriptive study design. A sample of health workers from the population of 200 health workers in the local government area serves as the sample size for the study, using a stratified random sampling and simple random sampling. The researcher adopted a questionnaire for data collection. Quantitative data was analyzed using content analysis, whereas qualitative data was coded and analyzed using Statistical Package for Social Science (SPSS) version 22.0 for windows. From the findings, the knowledge about ICT by the sampled health workers were quite impressive why, just as the extent of utilization of ICT knowledge was to a very great extent. The study submit that the benefit of ICT to the health workers are enormous ranging from the fact that it helps to boast confidence, makes lesson more interesting, helps to improve and enhance health research and practices among others. the study also unveiled that the extent of the application and utilization of ICT is very poor, some of the challenges of ICT ranges from cost of ICT facilities, poor internet connection, management problem among others. This study concluded from its findings that greater numbers of health workers in the study area are becoming aware of the use of ICT in health institutions and to increase the effectiveness of health care services delivery. And thus recommend that the problem of high cost need to be addressed



Introduction

Information communication technologies (ICTs) are diverse set of technological tools and resources used to create, disseminate, store, and manage information. They are variously called New Communication Technologies (NCTs) or New Information Technologies (NITs). They make possible computer mediated communication (CMC) and have given rise to the information superhighway. These technologies allow or facilitate interactivity among users or between users of information, and as Baumann and Flynn (1997) noted, they make it possible to collect and store seemingly endless amounts of information. They do not only have the ability to enhance assembling, processing, storing and exchange of ideas, messages and information regardless of distance, time and location, but make these processes easier and faster. For example, ICTs like mobile phones, micro-computers, digital radio, satellite and cable networks enable simultaneous reception, distribution, processing and retrieval of information globally (Olise, 2008). Access to up-to date information to support real-time decision making on issues of life are also facilitated by these ICTs.

ICT can be described as a complex varied set of goods, applications and services used for producing, distributing, processing, transforming information, telecoms, television and radio broadcasting, hardware and software, computer services and

electronic media, (Ozorji, 2010). ICT represents a cluster of associated technologies defined by their functional usage in information access and communication, of which one embodiment is the Internet. ICT is a revolution that involves the use of computers, internet and other tele-communication technologies in every aspect of human endeavour including health. It is simply about sharing and having access to data with ease. ICT is often associated with high-tech devices, such as computers and software, but ICT also encompasses more "conventional" technologies such as radio, television and telephone technology, (UNESCO; 2013).

ICT and computers are not the same thing. Computers are the hardware that is often part of an ICT system. ICT is regarded as the super highway through which information is transmitted and shared by people all over the world. Jimoh (2007) in Ozoji 2010) defines ICT as the handling and processing of information (texts, images, graphs, instruction etc) for use, by means of electronic and communication devices such as computers, cameras, telephone.

Ofodu (2007) also refers to ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. From these definitions, ICT could therefore be defined as processing and sharing of information

using all kinds of electronic device, an umbrella that includes all technologies for the manipulation and communication of information

The use of information communication technology in health care is not merely about technology but a means to solve the critical data management and clinical communication challenges in health care organizations, especially in developing countries (Soar, 2012). Given the high burden of disease and the low number of skilled personnel, Health is believed to improve health care by strengthening the health system, supporting delivery of care, and improving communication among different health care organizations and professionals (Fraser, 2010). Incorporation of information communication technology in developing countries has gained wide acceptance in the last several decades with different success stories in different sectors, especially in the business sector. However, when compared with other sectors, only a limited application of information technology advancements is seen in health care organizations (Ruxwana, et al., 2010). Recently there has been an increase in the implementation of e-Health applications in developing countries that includes tele-health, mobile health applications, electronic medical records, and health information management systems. However, most implementations remain in the pilot phase because of different technical and personnel issues.

Most evaluations and case studies from previous implementations in those settings report that infrastructural challenges and the existing skill levels of health professionals are the most common obstacles to the success of implemented Health systems (Luna, et al., 2013). However, the literature on the level of knowledge and utilization of health professionals and their current exposure in information communication technology use is scarce

Information and Communication Technology (ICT) is growing rapidly in Nigeria and has had a great effect on businesses and individuals. We can easily say ICT has not penetrated everywhere in the society which is understandable due to many reasons. Without any doubt Internet is the fastest growing communication technology today (Dlodlo & Sithole, 2001). The Nigeria health sector has been disintegrating for years and have suffered due to negligence. One can easily say keeping records of an institution like the health sector is very important and crucial to the development of the sector as well as the patients. This study will focus on why the health sector is in its present state and what can be done to improve the sector. I will focus on the crossover from the paper based approach to an electronic means, which we can all say is more effective and efficient. In general

Nigeria health sector has not fully utilized the benefits of ICT in the health sector and can be seen as backward development for a country that is adopting ICT rapidly. The patient's records are normally stored on a paper which can either be misplaced or useless when visiting another health center. As we all know sloppiness can cause a great deal of damage to many things most importantly the health of an individual.

Computer is a type of information technology that has become part of everyday life for many people. Its use in health care delivery is no longer a thing of debate as computers are used for educating students and clients; assessing, documenting and testing client's health conditions; managing medical records; communication among health care providers and clients; and conducting nursing research. It is necessary that nurses must have a basic level of computer literacy in order to perform jobs (Kozier, Erb's & Olivieri 2008). Health informatics is the science of using computer information systems in the practice of health related profession. It is a career that focuses on finding ways to improve information management and communications in the health profession in order to improve efficiency, reduce costs and enhance the quality of patient care (American Nurses Association (ANA), 2010).

Ajuwon and Odusanya (2004) in a study on knowledge and utilization of information technology among health care professionals reported that knowledge and utilization of information technology among health care professionals is poor necessitating that health care professionals should be trained on its uses and also included in the training curriculum.

Ozumba (2004) found that only 0.5% of doctors in Nigeria searched the internet for information relating to their clinical practice/research, and a good number of them believed that the internet had a role to play in medical practice, for nurses, ICT are used extensively in all aspects of nursing education as nursing programmes require computerized libraries and academic record keeping in facilitating the data based nursing e programmes and Faculty members use technological teaching strategies in the classroom and outside assignments as well as demonstrating and using applications in clinical rotations.

ICT serves as an instructional ally, assists with the management of information through the storing, manipulation, and retrieving of information (Cox & Dan, 1999). Computers further enhance academics for both the student and faculty in at least four ways access to literature, computer assisted instruction, classroom technologies, and strategies for learning at a distance. Other include management of human resources, keeping health records, budget and

financial administration. (Kozier, Erb's & Olivier, 2008). Further the conduct of both quantitative and qualitative research where each step of the research process, it facilitates generation, refinement, analyzing and output of data.

Statement of the problem

Health workers' interest, knowledge and skills of ICT applications can influence their acceptance, or not, of health information technology solutions in the workplace (Sicotte, et al., 2009). Positive attitudes are important and the willingness of health workers to use any health information technology system is influenced by their perceptions of its value, clinical benefits, and ease of use. In developing countries the successful adoption of health information technology is hindered by insufficient technical infrastructure. The non-existence or lack of reliable electricity or solar power to offer an alternative, ICT offer health worker the ability to store and retrieve patient clinical and socio-demographic information, laboratory results and preparation of referral notes. It also aids the preparation of discharge summaries, clinic letters and financial statements of the hospital, as well as delivery of laboratory results. The Internet provides opportunities to retrieve up-to-date information on different aspects of diseases, interact with colleagues via videoconferencing, and enhance communication amongst colleagues in different continents. Free access to Medline, medical journals, textbooks and the latest information on breakthroughs in medicine also encourages learning and research.

An information-proficient workforce that is ICT compliance computer literate, trained in information management skills and motivated to use the well-designed clinical systems would be necessary in a profession such as health. Clinical informatics will improve patient care by the intelligent application of technology and increase effectiveness and efficiency of care, as well as patient safety. Assessment of baseline knowledge and the utilization patterns of all personnel involved in health care delivery which is the major thrust of this study.

Therefore with the current trends in information and communication technology, it is expected that professional health workers should possess adequate knowledge and skill to aid efficient health practice, education and research. However, observation has *shown* that many practicing health worker in Nigeria seem to show no interest in the use of information and communication technology. Such that computers installed in every ward in Bomadi local government area of Delta State are lying without being utilized by health worker. The question now arises; are health worker in Bomadi local government area not computer literate? Are they not aware of the

relevance of computer application in their clinical practice, health education, administration and research? The above observations formed the impetus for the study.

Justification

An effective information and communication technology system should provide information in the right form, at the right place and at the right time. Such data are necessary for putting in place appropriate health plans and making the right management decisions. Where resources are scarce, it's more important that evidence informs decisions for wise use of limited resources (Kaen, 2006). Unfortunately it is rare hence inefficient and ineffective use of resources. Having quality ICT system is key in improving interventions and eventually health indicators. This study is justified base on the fact that it will provide evidence based information to improve interventions and have cost effective interventions relevant to the need of the area. Outcome of the study will inform health care service providers on information utilization in low income areas. The study will strengthen data utilization for better evidence based interventions by health workers. The study will in addition improve data utilization in the district through understanding of unique strengths and weaknesses of the system and providing innovative solutions for improvement of the system.

Purpose of the study

This study aims at the knowledge and utilization of ICT among health workers in Bomadi local government area of Delta State.

Broad objective

The broad objective of this study is to investigate the knowledge and utilization of ICT among health workers in Bomadi Local Government Area of Delta State.

Specific objectives

1. To determine the level of awareness of information and communication technology among health workers in Bomadi local government area of Delta State.
2. To ascertain the extent to which health workers are aware of the importance of information and communication technology to health workers and to establish the level of its utilization of ICT.
3. To determine the attitude of health workers towards ICT and how it impacts on the quality of services rendered.
4. To identify the factors that affects health workers attitude towards the Utilization of ICT.

Research Question

The following questions were deduced from the narration of the background study

- i. How much does the health worker in Bomadi local government knows about ICT in health
- ii. To what extent do they apply and utilize the knowledge of ICT in health care management
- iii. Have these utilization of ICT and application of it impacted positively or negatively in health service quality?
- iv. What challenges are the health workers faced with and how can these challenges be overcome or reduced?
- v. Does gender of the health worker influence utilization of ICT?

Hypotheses

The following null hypotheses (H_0) will be formulated at 0.05 level of significance.

1. There is no significant relationship between ICT awareness and health worker service delivery
2. There is no significant relationship between ICT utilization and health worker service delivery
3. There will be no significant relationship between gender and relevance of information and communication technology computer literacy to health workers profession.

Literature Review Conceptual Framework

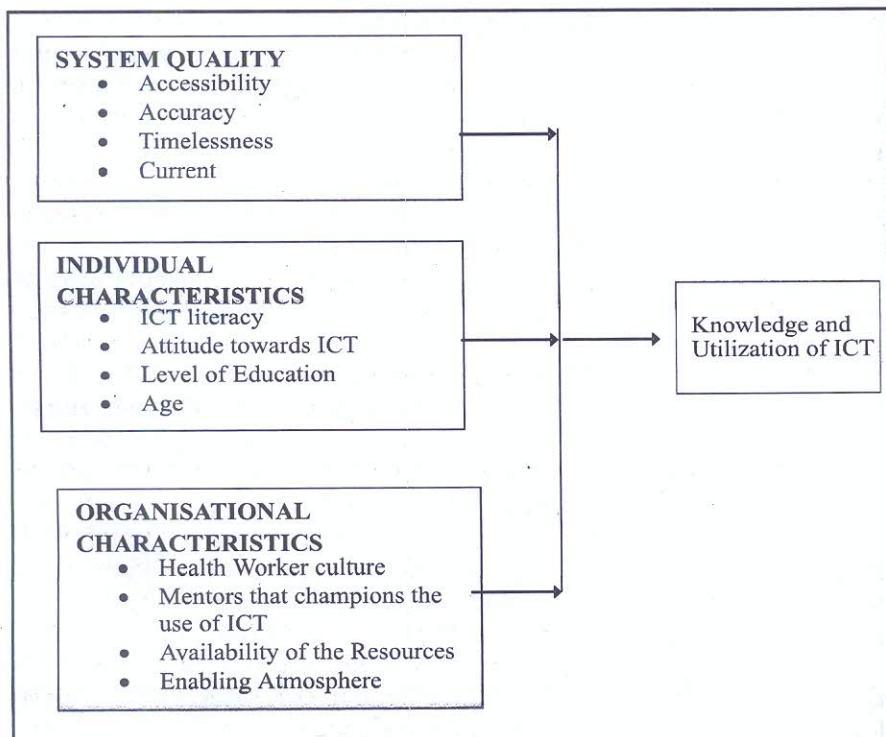


Figure 2.1: Conceptual Framework Source :Adapted from Lorenzi et.al.(2000).with modification

Delimitation of the study

The study will be carried out in Bomadi local government area of Delta State of Nigeria; this community has an informal settlement, an urban slum in a rural district. The results can only be generalized to other areas with similar characteristics. The study is delimited within Bomadi local government area of Delta State.

Limitations of the study

- Study is limited to the health worker in Bomadi Local government area of Delta State of Nigeria,
- Both male and female health worker of age bracket between 18 -60 yrs including the village health committee member, VHW, TBA etc both in the community and facilities

System quality, individual and institutional characteristics influence the knowledge and utilization of ICT by health worker supporting clinical decision-making and professional practice. In system quality the elements of interest are:

Data Accuracy: The extent to which the data are free of identifiable errors. This ensures that the interventions employed are correct in regard to the target audience.

Data Accessibility: Data items that are easily obtainable and legal to access with strong protections and controls built into the process.

Data Currency: The extent to which data are up-to-date; a datum value is up-to-date if it is current for a specific point in time, and it is outdated if it was current at a preceding time but incorrect at a later time.

Data Timeliness: Concept of data quality that involves whether the data is up-to-date and available within a useful time frame; timeliness is determined by manner and context in which the data are being used. Individual factors such as the level of education, ICT literacy, attitude towards the system. Age influence how an individual learns the required skill, how fast and their

understanding on the variables of interest being looked into is. It ensures that the quality of data that is produced is of high quality thus positively influencing the decisions made. a factor that is paramount in

improving health indicators in the facilities (Heeks,2006)

Institutional factors such as, organizational culture, mentors and resources ensure that the system is run smoothly and the people that use it are accorded the necessary assistance. This includes having the necessary support for the system to be of benefit to the health worker in both learning and being able to make the evidence based decision in the facility; having the necessary equipment's to be able to carry out the tasks assigned. Having mentors in the facility that champion the use of the system ensures that issues with it are addressed promptly and there are opportunities of improving the system to ease the users work (Heeks,2006) The above factors will show how the status of the system is,of the above factors those that motivate or hinder its utilization and how the information generated from the system is perceived

Types of ICT

There are varieties of technologies that can be used in health profession. Each of these technologies has its own redeeming qualities and limitations and different situations which call for different technologies. These includes the following:

Internet/Web-Based ICT: Internet/Web-Based ICT provides an environment where health care professionals and those in training can access and study materials online. It may involve the use of live e-learning tools such as application, sharing, internet, telephone, online whiteboards, discussion boards, and chat and messaging programmes that allow real time interaction between instructors and learners or between the health professionals and the audience or patient as the case maybe. It can also be used to transmit text, graphics, images, animation, or video. The required tools for online learning include a personal computer and an Internet connection. There are several ways a user can connect to the Internet, which include the standard analog modem, Digital Subscriber Line (DSL), Cable Modem, Integrated Service Digital Network (ISDN), Local Area Network (LAN), Cellular, and Wireless broadband (fixed wireless and satellite) and in the android phones.

All the above connections, except for a standard analog modem connect are considered broadband connections. All these methods allow connections to an Internet Service Provider (ISP) that provides a gate way to the rest of the Internet. An analog modem and ISDN require a "dial up" connection where a user must dial in to connect to the ISP, whereas the other Internet access method denoted as "always on" connections, require no dialing.

CD – ROM and DVD: CD –ROM (Compact Disc – Read Only Memory) store on any computer equipment with a CD-ROM drive (Hampton and Bartram, 2002 in UNESCO 2003). DVD (Digital Video Disk or Digital Versatile Disk) are similar to CD – ROMs and can be used the same way as CD-ROMs but contain more information. Most CDROMs have 650 or 700 mega bytes storage space whereas most DVDs have room for 4.7 gigabytes, which equals approximately seven times more storage space than a CDROM.

DVDs are not widely used yet, mainly because of different standards for writing to DVDs. CD-ROMs have a large capacity and can support the storage of information in a variety of formats including text, animation, video, audio, and graphics. Thus, learning materials can be presented in different ways. This allows the material to cater to multiple styles of teaching health ethics, (UNESCO, 2003). CD-ROM or DVD is very durable and quality does not degrade after repeated use. However, scratching the surface or other abuse on the medium may prohibit it from being read by the CD-ROM drive.

A major limitation with CD-ROM and DVD is that a computer with CD-ROM drive (in the case of DVD, a DVD-drive) is required to access the information. This equipment may not be available to learners in developing countries.

Teleconferencing: Teleconferencing refers to interactive electronic communication among people located at two or more different places. There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology: audio conferencing, audio-graphic conferencing, videoconferencing and Web-based conferencing.

Audio conferencing: Audio conferencing involves the live (real-time) exchange of voice messages over a telephone network. When low-bandwidth text and still images such as graphs, diagrams or pictures can also be exchanged along with voice messages, then this type of conferencing is called audio graphic. Non-moving visuals are added using a computer keyboard or by drawing and writing on a graphics tablet or whiteboard. Audio conferencing allows two-way, real-time communication between instructors and learners through audio. Older audio conferencing technology uses the telephone system infrastructure, where the key component is an electronic device called an audio conferencing bridge. Using Internet telephony where digitized voice packets are sent between individuals over the internet. Individuals can use computer programmes such as instant messenger, micro soft net- meeting or MSN

messenger to converse with individuals. Older audio conferencing technology simply includes local or long-distance telephone costs and the cost of the bridge itself. Internet audio conferencing incurs the cost of internet access and the internet telephony equipment and or programmes. The main advantage of audio conferencing is that it allows for direct, two-way interaction between participants.

Discussions occur in real-time where learners can ask questions and instructors can respond immediately or patient and practitioner communication. Audio conferencing technology also has low set-up and operating cost. The main disadvantage of audio conferencing technology is the absence of visual interaction between the instructors and the students.

Video Conferencing: Video conferencing allows participating individuals in different locations to see and hear each other in real-time through video-conferencing equipment. Older video conferencing technology uses leased telephone lines at high hourly rates and the installation cost of the type of system is expensive. It is also a more rigid environment that requires special room set-up, advanced scheduling, and a professional operator (Dixon; 2000, in UNESCO 2003). Recent video conferencing technology, however, uses the internet as the transmission infrastructure, thus decreasing the installation and usage costs. It also has the same advantage as the internet; flexibility, convenience, and iniquitousness. The main advantage of video conferencing is that it allows real-time, two-way interaction between individuals in different places. Participating parties may be in remote areas and may be separated by large distances. All individuals involved in the educational system from the teachers, students, curriculum developers, and specialists, to the policy makers can participate in a video conference. It can be used for presentations, teaching sessions, discussions, course delivery (in combination with other media) and student support (Perraton et al, 2002, in UNESCO, 2003). It can also be used for health education in local communities

During course delivery and lectures instructors can gauge a student's progress and responsiveness immediately. Instructors can answer questions and provide feedback immediately. The main drawback for video conferencing is the relatively high cost. Due to the high set-up cost video conferencing sites may not be readily available, especially in remote sites and developing countries.

Audio-cassette tapes: Audio tapes can be played by any standard cassette player. Through audio, the tapes can convey information that may be easier to illustrate with sound than simply through text or

diagrams. It can accompany other means of instruction such as print based material and classroom teacher and provide detailed information step-by-step (UNESCO 2003). Tapes are recordable and thus can be reproduced easily and cheaply. Tapes provide a permanent and flexible storage of information. The tapes can be stopped to allow for classroom interaction and discussion and they can be replayed in instances where it might be beneficial to repeat parts of the lessons. Audiotapes provide only one-way communication where an external instructor cannot interact directly with students and they cannot gauge the progress of the students. Tapes lose their effectiveness if the information is presented as one long lecturer.

Video Tapes: Video tapes can be produced and edited by using a portable video camera and a home video editing suite. Video tapes can be viewed by using a TV and VCR combination. Video tapes appeal to both audio and visual senses. Real-life situations can be presented and described using video as opposed to using text or audio. The learner has the flexibility to replay, pause, and rewind video tapes and can repeat lessons as often as they wish. Video tapes can support the teaching of practical skills delivered through open and distant learning. Caution must be exercised when developing video tapes so as not to include too much information as that could degrade the learning experience. It is also utilized in health management of cases where practitioner are exposed to related literature

Interactive Television: In this context, interactive television refers to instruction occurring over broadcast television. It allows learners to receive live television instruction remotely; away from the actual instructor. The instructors are located at a broadcast studio and the learners view the instructors on a television monitor. The interaction is provided by one or more additional components. The actual broadcast can be achieved using geo-stationary satellite, microwave, and cable or fiber optics. The main advantage of interactive television is that instruction can be transmitted to several different sites, and thus potentially reach a large number of learners using existing broadcasting infrastructure. The main drawback of an interactive television system is its high cost, both at the main broadcasting site and the learner sites. This cost, however, can be offset if the instruction can reach a large enough number of people. In health programme adverts

ICT: An Indispensable Infrastructure in Healthcare Delivery

The provision of quality healthcare delivery in a country is guided by the level of the ICT infrastructure possessed and used by the country. It is a prerequisite

for enhancing the wellbeing of a country. Communication has moved from the largely manual or physical documentary method to digital communication. It enables the dissemination and sharing of health information across national boundaries. For instance, a medical doctor can send an electronic X-ray of a patient to a leading expert in another country who could readily interpret and provide more details of the disease condition, as well as send a feedback to the medical doctor all within a few minutes, (Hassan, Siyanbola and Oyebisi, 2011).

ICTs Systems and their Applications for Healthcare Delivery: An ICT system is a set-up consisting of hardware, software, data and the people who use them. It commonly includes communications technology, such as the Internet. ICT Systems are every day and ordinary, yet extraordinary in how they can add extra power to what we do and want to do. By using ICT systems we are: more productive - we can complete a greater number of tasks in the same time at reduced cost by using computers than we could prior to their invention, able to deal with vast amounts of information and process it quickly and also able to transmit and receive information rapidly. Apart from these, organisations concerned with delivering specialised services can use ICT systems to suit their peculiar needs.

Types of ICT application in use in Health profession

- Computer applications:** Computer Applications also called computer programmes or software that instructs the hardware to perform certain tasks. The most commonly used software programmes are word processors, databases, spreadsheet, blood analysis, SPSS diagnostic groups, nursing management or process software and presentation graphic programmes.
- Computers and Networks:** A computer is an electronic device which can accept data in a prescribed form, store, process the data and supply the results of the processed data in a specified format as information or as signals. When they are connected together, they form networks that enable the sharing of common information needed throughout an organization (Umoh and Inyang, 2003). Computer software such as word processors, data base management software, graphic software etc enable computers to be adapted for various healthcare activities.
- Telephones:** It makes for simple, direct, and effective instant communication. Verbal communication, short message service, teleconferencing, still and video pictures, calculations, organizing, dictionary service etc. according to Shoki and Ufuophu-Biri (2008) are some of the uses to which telephones can be put.

- Compact Disc-Read-only Memory (CD-ROM)/ Digital/Versatile Disc (DVD):** The CD-ROM is storage medium with high concentration of data and high density combined with motion video and high-quality audio. Its advanced form, the Digital/Versatile Disc (DVD) can be used for processing, storage and dissemination of information like text, photographs, graphics, voice etc. Multimedia Projectors ICTs such as the multimedia projector can be used to give presentation to colleagues and students through eye-catching slides that can be adapted for the doctor's need. This avoids the need for the medical illustration department.
- The Internet:** This covers areas such as the interconnected and networked technological infrastructure that supports the World Wide Web; open and closed source software and architecture (e.g. Firefox, Wikipedia, Internet Explorer, and Google); email, chat and instant messaging (e.g. AOL, MSN); blogs and social networking sites (e.g. Face book). Interactive forum and online discussions are facilitated by the Internet. The above do not in any way represent the full list of ICT media but are the ones within the scope of the study

Importance of ICTs to Healthcare

- Improved Healthcare Practices:** ICTs have been seen to improve the quality of healthcare delivery as a result of their far reaching capabilities. For instance advancements in technology have made available gadgets that serve as decision aids for practitioners, for prompts, reminders, care pathways, guidelines ; clinical management tools such as electronic health records, audit tools; educational aids for guidelines, medical teaching as well as electronic clinical communications tools for referral, booking, discharge, correspondence, clinical e-mail, etc. Moreover, electronic medical records are also available for record linkage.
- Research and Studies:** Medical knowledge is a dynamic and fast growing area of health. Medical research and practitioners need to have access to a wide array of information. With the Internet, access to information relating to healthcare worldwide is possible thus eliminating the problem of limited data for research on disease conditions and preventive measure as well as help to distribute new medical knowledge.
- Networking and Advocacy:** The expansion of communication networks and e-mail has markedly enhanced the development of professional networks and on-line communities of practice by making it possible to reach across geographical boundaries and communicate with

someone or many people quickly and easily. The idea of networking for better exploitation of the opportunities offered by ICTs is also widely reported in previous studies. Membership in such electronic discussion groups is meant to be self-selecting and might be active or passive, allowing anyone with a genuine interest to participate at the level of activity they chose. Moreover, on-line discussion groups, in conjunction with face-to-face interaction at conferences or trainings, enrich professional relationships and reinforce new learning.

d. **Improved Efficiency:** Since health workers play important roles in a nation's socioeconomic and political growth, their efficiency in these areas can be greatly enhanced through the opportunities offered by the use of ICTs to meet their needs. ICT enabled processes and clinical information systems can improve patient records, collection of bed-side data, laboratory reports, pharmaceutical receipts and demographic movements between hospitals, thus becoming very vital for doctors, and other health professionals. Ndukwe (2007) believes that the development of mobile communications, teleconferencing facilities and multi-media capabilities of ICTs, have been of immense benefit especially in healthcare delivery. By this revolution, spatial differences between medical specialists, medical centres and patients have been eliminated.

e. **Motivating benefits:** ICT can act as a motivating tool for many health care professionals. Young people are very captivated with technology. Health Educators and public health scientist must capitalize on this interest, excitement, and enthusiasm about the Internet for the purpose of enhancing learning. For already enthusiastic learners, ICT allows the teacher to provide students with additional learning activities not readily available in the classroom.

f. **Acquiring Varied Writing Skills:** If health educator or professionals are required to publish their work on the Internet, they have to develop hypertext skills. These skills help students gain experience in non-sequential writings. Moreover, and since the Internet is open to all with access, professional health workers and student publishing their work on the Internet are forced to be mindful of their language and to write to non-expert audience

Problems militating against effective use of ICT in the health Profession

There are certain factors which hinder health professionals in Nigeria in utilizing quality ICTs knowledge and skills in their practice as well as their

use by both health worker and public health scientist. Some of these include (i.) lack of technically experienced lecturers, (ii.) limited ICTs facilities and infrastructure, (iii.) inadequate course content for ICTs trainings, (iv) lack of clear directions in the Nigeria National policy for Information Technology (NNDIT) on public and community health education, lack of leadership by professional organizations, and problem of electricity. (v.) Inconsistent Electric Power Supply. Idowu, & Bastin, (2008) observed also that a lot of damages have been caused to both research institutes and computer laboratory equipments as computer components such as hard disks and mother board can be destroyed by interrupted and unreliable power supply. (vi) ICT equipment was made to function with other infrastructure such as electricity. Most internet facilities in Nigeria suffer frequent downturn due to power interruption and equipment damages due to incessant power interruption. (vii.) Limited Technology Infrastructure: (Especially internet access, bandwidth, hardware and software provision). The attitudes of various managements in and outside institutions towards the development of ICT related facilities such as the internet and procurement of computers is rather slow in some instances, and in others there are no aids or support by the government at all (Albirini, 2006) in Kwache 2007). (viii.) High Cost of ICT Tools: The price of computer hardware and software; which are major ICT tools in Nigeria is very high compared with the income of an average Nigerian. The high cost of these materials prohibits for most people, and even government establishment to buy. (ix) Lack of qualified ICT Personnel: Kwache (2007) notes that most institutions lack computer literate teachers and ICT experts that would support and manage the internet connectivity and or for application of computing in the teaching learning process. (x.) Lack of Maintenance Culture: Lack of maintenance culture is another factor that is able to pose hindrances to effective ICT use in Nigeria higher institutions. Idowu et al (2008) notes that government agencies in Nigeria have no financial plans for maintenance of ICT equipments and allowances for depreciation in value for such ICT materials. (xi) Lack of time to experiment ICT: Lack of time is a factor that may hinder ICT use in public health education as noted in (Mojgan, Kamariah, Wong, Bahaman & Foo, 2009). The authors revealed that barrier to time to experiment manifest in two ways: (a) released time and (b) scheduled time. Lack of released time due to regularly scheduled classes for future professionals may prevent health professionals in the future from using ICT in their practice as well as prepare materials for use with their respective station. Lack of time scheduled on the time table to use ICT with students may pose a barrier to using ICT in their later profession.

Empirical review on ICT and Health Worker

Knowledge level assessment, accessibility and use of ICT among health workers are interesting areas that require research work. In developed countries, research on knowledge level, access and use of ICT among health workers are quite available.

Khan, Bhatti & Khan, (2011) in a descriptive study in Bahawalpur used 200 students which was the sample for the study to measure students' use of ICT. Questionnaire was the instrument they used for data collection while SPSS software was the statistical measure used. The study revealed that 23(19.5%) were male and 132 (80.5%) respondents were female. The study also revealed that internet use varies according to the different information needs of the users: a vast number of respondents use Google search engine: 126 (76.8%), 43 (26.2%) respondents were found Yahoo users, while 5 (3.0%) respondents use MSN, 3 (1.8%) respondents use Alta Vista, 2 (1.2%) respondents Hot Boot, 3 (1.8%) respondents Lycos and 2 (1.2%) respondents use Netscape .80 (48.8%) access ICT at their departmental computer lab, 52 (31.7%) respondents use at their class room, 15 (9.1%) respondents use library, 5 respondents (3.0%) avail it at their university hostel, 6 (3.7%) respondents access at net café while 4 (2.4%) respondents use it at their friend's homes. What this study did not reveal was which this current study hopes to address was if the sampled student where public health education student nor professionals

Naglea, Heather & Clarke, (2004) in their study: "Assessing Informatics in Canadian Schools of Nursing," had a target population of all Canadian Schools of Nursing with undergraduate education programme. Their sample size was 81. Findings from the study include the following; ICT Access: They observed that universal access to the Internet, email, library, software programmes and computers ~100% for faculty; less to 52 students (~20% less). Universal access to research data-bases is available to faculty in ~75% of the schools; less so for students. Availability of ICT in classrooms as inadequate. Faculty has more access to ICT than students. A desirable level of access is available in less than 1/3 of schools. There is greatest access to the library (68% faculty; 43% students) and least to clinical information systems (22% faculty; 14% students). Students' greatest access to **clinical applications** is in acute care settings and least in home care. In human resources; technical human resources (e.g. computer lab technicians) were more adequate to integration of Nursing Informatics (NI) into undergraduate education program than human resources relevant to teaching. Less than 1/3 of the schools perceived that faculty and new students have adequate NI competencies and computer skills. Approximately 1/4

of the schools were likely to have clinical preceptors/staff with adequate competencies. Approximately 5% schools are likely to have adequate graduate students to assist with teaching NI and using ICT. Educational applications of ICT; WEB-CT or other distant ICT applications are used in approximately 3/4 of the schools. There is variability in use of educational ICT, primarily due to limited school resources.

Erah and Dairo (2008) carried out a descriptive study on use of Learning Management System (LMS) which is a special ICT Programme among Pharmacy students in Nigeria –Benin. The study was carried out to elicit information on access to computer and internet, problems in applying ICT materials and perception of e-learning among Pharmacy students in Pharmacy Education in the University of Benin. Questionnaire was used to elicit information on ICT use from 165(sample size) Pharmacy students who were recruited for the study. Out of this number (84%) had access to internet, only 16.1% owned computers and majority (82.1%) use cybercafés for internet access. Frequent electric power failure, inadequate computer materials and skilled personnel, and slow internet speed were identified by 64.8(82.5%) of the students as problems in using computer materials in the University. While willingness to pay was not considered a problem, 80.4% of the students were only willing to pay not more than US\$ 7.96 per semester for internet access. Over 92% of them felt that ICT will make teaching and learning more exciting and effective when combined with the traditional teaching approach. The researchers recommended that ICT use may improve teaching and learning of Pharmacy.

Aguele (2007) in his descriptive study on information and communication technology challenges for teaching and learning in Nigeria among university teachers. Sample consists of 240 university teachers. A questionnaire was used to elicit information on ICT challenges for teaching and learning. He noted that teaching staff of public universities in Nigeria were favourably disposed to the use of the computer. They however, showed lack of enthusiasm towards integrating ICT into the teaching and learning process. According to him quite a large number of university teachers are familiar with the use of e-mail and internet facilities for personal and research purposes. Universities lack adequate facilities to implement the integration of ICT procedures into teaching and learning process. Teaching staff and students of universities are not adequately prepared for the use of ICT tools in teaching and learning process. Universities lack adequate fund to effectively finance ICT services. Universities are not able to purchase sufficient bandwidth for their ICT

65(81.25%); financial constraints 47(58.75%); and lack of access to ICT facilities 37(46.25%); lack of operational knowledge and skill 58(72.5%); no training opportunity 53 (66.25%); insufficient time for practice 52(65%) and inability to keep abreast with present technological changes/demands 49(61.25%).

Akadiri et al., (2009) reiterated while compiling their long investigative document on the impact of improved telecommunication services on health care delivery in Nigerian Teaching Hospitals that the dream of ICT driven health sector is realizable in Nigeria if successive government can persist in the effort to improve national infrastructures especially in the areas of telecommunications, electricity and information and media. If the introduction of other ICT component such as computer and internet in health care would be given the same attention being given to telephony, access to quality health care in Nigeria can be improved rapidly.

Woreta, et al., (2013) while investigating Knowledge and utilization of information communication technology (ICT) among health science students at the University of Gondar, North Western Ethiopia observed that students' knowledge was inadequate and utilization of ICT was poor. Therefore, the university should sustain professional development to improve teaching, to raise student performance and equip the college with student centered ICT computer labs to increase students' ICT utilization.

Udousoro (2014) also did revealed that health workers apply ICTs to various activities such as communicating with colleagues and patients; using ICTs as personal assistants, (reminders, schedulers etc); as well as for storage and analysis of patients' data, etc . Moreover, ICTs impacted service delivery in areas such as improved diagnosis, assembling health workers faster during emergency situations through calls and text messaging as well as better patient management procedures occasioned by easy access to updated information on the Internet.

Alwan et al (2015) also established that while investigating the Knowledge and Utilization of Computers among Health Professionals in a Developing Country: A Cross-Sectional Study observed that computer knowledge and utilization habits of health professionals, especially those who work in primary health centers, were found to be low. Providing trainings and continuous follow-up are necessary measures to increase the likelihood of the success of implemented e-Health systems in those settings.

Odiwuor, et al., (2015) while investigating the

utilization of Information Communication Technology (ICT) Among Health Care Providers in Ghana observed that low access and utilization of ICT facilities among the health care providers and lack of capacity among the health workers to effectively and efficiently use ICT facilities to bring any meaningful impact in the quality of health services offered, they also observed that health workers trained in computer were mostly trained before joining the health service a fact that the training receive may not be relevant to ICT application in the context of better health care provision in the health system today which often a time is largely associated with lack of interest and lack of money for ICT training among the health care providers.

Summary of the Reviewed

The health sectors of many African nations have witnessed poor knowledge, access and use of ICT. Nigeria has set a wide array of ambitious goals of several global and national frame works that seek to promote the fundamental rights of her citizens to quality health services. A significant challenge for Nigeria is that, despite all her efforts, Nigeria is one of the only two countries that were at the risk of not meeting the target of good health delivery because of the quality of health services they are rendering. It has been discovered that ICT promotes good health delivery and provides effective and efficient framework for the world of work, study and play. Various ICT types, benefits, activities, and constraints were highlighted. Various empirical reviews were used to explain practical works done by other researchers as regards; knowledge, access and use of ICT. Constraints encountered by health worker in accessing and using ICT were discussed in line with the literature review.

Study Design

The cross-sectional survey research design was utilized for this study, mainly based on quantitative questionnaires to answer questions on knowledge and utilization of ICT among health workers in Bomadi local government area.

Structured questionnaire - usage in a descriptive design facilitates the description of a situation in its current state and solicits information directly from the respondents. This is exploratory in nature allowing easy description of the ICT phenomena at one point as they exist in their said community. The design is, therefore, considered appropriate for use in the present study because it would give current information on the level of knowledge and attitude of the Bomadi during health work on ICT.

Scope of the Study

The study looked at the level and extent of awareness and corresponding utilization of ICT as well as

examine challenging factor against ICT in Bomadi local government area.

Study Area

Geographical location: The study area lies on the bank of the Forcados River. It lies between latitude $5^{\circ} 30'N$ and $5^{\circ} 34'N$ and longitude $5^{\circ} 43'E$ and $5^{\circ} 48'E$. It is bounded by Ughelli North Local Government area in the East, Ughelli Ughelli North. Bomadi is a low lying region, altitude not exceeding 6.10m (12ft) above sea level on the average. The seasonal flooding conditions of swamps and creeks are as a result of the low lying position of the town and its position on the bank of the river. Due to the location of the town, it possesses a vital asset of accessibility to sea, thus making it one of the most important and busy port west of the Niger Delta.

Bomadi is an Ijaw local government area in Delta State, Nigeria. That is bordered in the south by the Atlantic Ocean and the Nigeria state of Bayelsa, in the north by the Urhobo, in the west, by the Itsekiri and in the east by the Isoko and Ukwuani (Asabase). That is to say it cover an area of 129 km^2 – Density: 782.5 inh./km^2 with a population of 86016 according to the 2006 population census. The town in Bomadi local government area are Ogriagbene, Esama, Akugbene, Bomadi, Kpakaima, Ekamuta-gbene, Azebiri, Ogodobiri, Okoloba and Kalafuo-gbene. Bomadi local government area play home to different health facilities which include a government general hospital, communities health center and different private hospitals and clinics. It has a lot of health worker which include stationed and unstationed health worker, permanent and temporary health worker. The customs and language of Bomadi people are more or less like that of any ijo nation around the Forcados river.

According to Guanah (2007), there are five types of marriages in Bomadi. These are;

- (a) Ekie-ere (simple marriage),
- (b) Fei-ere (big dowry marriage)
- (c) Tei-ere or Agbai-ere (concubine/Lover),
- (d) Kore-Weri Koru (Suspended marriage), and
- (e) Tebe Tiemo (Forced marriage).

In the first instance (Ekie-ere), the consent of the bride and parents is sought through a middleman who is normally a member of the bride's family. If the bride-groom or his parents can do the contact, the custom still requires a middleman at the point of paying the dowry (Bride price). The duty of the middle man is to serve as the surety of the marriage and also to see that his sister/relation is given out to a responsible man and that his friend (bride groom) is not disappointed in the marriage. The major taboos in Bomadi local government area is that on the death of

a witch and wizard they are never buried rather they are thrown into the river for it is big taboo for such category of people to be buried. Also deceased are buried in locations determined by cause of death or circumstance. The people of Bomadi are either traditional worshipper such as Egbesu worshipper or Christians introduced into the communities by the white men.

Study Population

The target population is constituted by the entire health worker, in Bomadi local government area of Delta State which is 200 workers. This comprises of those working both in community health work and the different health center in Bomadi local government area of Delta State. Individual verbal consent was obtained from the respondents prior to data collection and permission for data collection.

Inclusion Criteria

All staff working in the community and public health centers within the local government area. The participants' ages ranged between 18 and 81 year of both sexes was included, both permanent and temporary workers

Exclusion Criteria

Workers from different local government area as well as non-health worker are not considered for this study

Sample Size

The entire Health Workers (HWs) in Bomadi LGA will be used as sample for the study.

- These are the Hierarchy of the health workers
- Doctor Male - 1
- Nurse - 8 Males And 28 Females = 35
- Community Health Officer - 5 Males and 10 Females = 15
- Community Health Extension Workers - 10 Males and 35 Females = 45
- Junior Community Health Extension Workers - 8 Males and 30 Females = 38
- Health Assistance -16 Males and 50 Females = 66

Sampling Procedure

The multi-stage sampling procedure was employed to draw the sample for the study. The procedure for sample selection involved three stages. In the first stage stratified random sampling was used to stratify the health facilities located in the different communities within the local government area that make up Bomadi Health District into predominantly urban and predominantly rural health facilities. The second stage involved the use of simple random sampling techniques of balloting without replacement to select two health facilities out of the four functional ones in each of the communities within Bomadi local government area.

Two was selected from urban and two from rural health facilities. This procedure provided a total of 10 health facilities out of 20 functional ones located in Bomadi Health District. In the third stage, simple random sampling techniques of balloting without replacement were used to select 30 health worker from each of the 10 health facilities that were sampled. The decision to select 30 respondents from each of the selected health facility was to meet up with the (10%) recommended by Nwanna (1991). At the end of this sampling procedure, 300 respondents was selected and utilized for this study.

Methods and Instrument of Data Collection

The instrument for data collection was the researcher-designed questionnaire to measure level of knowledge and attitude of the health worker. The questionnaire was consist of four sections namely section A, B, C and D. Section A deals with personal data of the respondents, such as age, sex and qualification, while section B will consist of 10 multiple choice questions for testing the respondents' knowledge of the ICT. Section C will consist of 10 items which supply response on the utilization of ICT. The respondents were required to choose one from the four options, a-d, to indicate their degree of agreement or disagreement as follows- Strongly Agree(S A), Agree (A) Disagree (D) and Strongly Disagree (SD) which were weighed 4, 3, 2, and 1 respectively for positive questions while the reverse was the case for negative questions. Section D contained 15 items having "Yes "or"No".

Validity and Reliability of the Instrument

The content validity and face validity of the research instrument was established by giving the draft copies of the instrument, the specific objectives, research questions and the hypotheses of the study to five experts in the public health department of Novena University, Ogume. Their criticisms, advice and suggestions will be used in producing the final version of the instrument for data collection. While the reliability of the instrument will be determine through split-half method. A sample of two hundred health workers in Bomadi government local area whose area was selected for the study was exposed to the instrument. The returned copies of the text was splitted into two using odd and even numbered statements or questions.

Ethics Consideration

An ethical approval was obtained sought from the Department of Public and Community health joint ethical committee of the local government prior to commencement of the study. The questionnaire was administered by the researcher during visitation to their working place during working hours. Their

consent was sought and obtained; confidentiality was assured, and the protocol of the study was explained to each participant. Upon consenting, all participants was be encouraged to answer the questionnaire in the presence of the researcher so as to be able to reduce items misinterpretation, and maximize the return rate

Method of Data Collection

In order to facilitate access to the worker in the communities, a letter of introduction from the Head, Department of Public and community Health, Novena University, Ogume, seeking permission to carry out the research was presented to the officers in charge of the establishments to be used. A brief letter explaining the purpose of the study was attached to each copy of the questionnaire. Copies of the questionnaire were administered by the researcher and two research assistants. The two assistants was given instruction on how to administer the instrument. The researcher and his assistants personally administered the questionnaire at various offices and collect the completed copies from the respondents on the spot. This was ensure that the respondents supplied independent responses.

Method of Data Analysis

The returned questionnaire was properly cross-checked for completeness. Copies that were incomplete or that have incorrect responses was discarded. The information from the questionnaire was coded using SPSS batch system to analyze the data. In determining the level of knowledge and attitude of the possessed by workers, the responses was marked and graded over one hundred (100) per cent. Subsequently, the average score (performance) of the respondents on each sub-scale was divided by pooling together the individual scores on such sub-scales and dividing by the number of respondents involved. The resultant average score was be used in each case as an index of Ashur's Criteria (Ashur, 1977).

Limitation of the Study

- Study is limited to the people working in health centres as well as those health worker in the community within Bomadi local government area,
- The study is limited to both adult.
- Traditional medicine or chieftaincy
- Traditional birth attendant
- Community health worker
- Facility used health worker
- Permanent and temporary health worker

Data Presentation and Results

Analysis of Demographic Data of the Respondents

Table 1: Summary of the Respondents' Bio Data

Variables	Frequency	Percent (%)
Age		
20-30	11	5.5
31-40	113	56.5
41 and above	76	38
Total	200	100
Gender		
Male	48	24
Female	152	76
Total	200	100
Working Experience (years)		
6-10	20	10
11-15	140	70
16 and above	40	20
Total	200	100

The result in Table 1 shows that majority of the respondents numbering 113 representing 56.5 percent of the total number of respondents were between the ages of 31 and 40, 11(5.5%) respondents were in the age range of 20 and 30 and 76(38%) of them were 41 years and above, while none of the respondents was below the age of 20 years. A greater number of the respondents numbering 152 representing 76 percent of the respondents were female while 48(24%) respondents were male. Respondents who had 6-10 years working experience were 20(10%), 140(70%) respondents had 11-15 years of experience and 40(20%) of them had worked for 16 years and above, while none of the respondents had less than 6 years working experience.

Table 2: ICT Literacy

Items	Frequency	Percent (%)
ICT literacy		
Yes	200	100
No	0	0
Total	200	100
Reason for ICT Literacy		
Absences of ICT center	95	47.5
Financial problem	60	30
Time shortage	5	2.5
Less attention to ICTs	40	20
Total	200	100
ICT awareness		
Yes	195	97.5
No	5	2.5
Total	200	100

The result in Table 2 show that all the respondents 200(100%) were ICT literate. The reason for ICT illiteracy according to 95(47.5%) respondents was absences of ICT center, 60(30%) respondents said

financial problem, 5(2.5%) respondents said time shortage, while 40(20%) respondents said less attention to ICTs. 195(97.5%) said they have ICT awareness while 5(2.5%) said they do not have.

Presentation of Data

Table 3: Knowledge about ICT

Items	Frequency	Percent (%)
Have you received any form of training on ICT?		
Yes	200	200
No	0	0
Total	200	100
What type of ICT training did you receive?		
Formal	195	97.5
Non-formal	5	2.5
None	0	0
Total	200	100
Do you have internet connection inside the health facility?		
Yes	5	2.5
No	195	97.5
Total	200	100

In Table 3: the result shows that all the respondents received training on ICT. 195(97.5%) respondents had a formal ICT training while 5(2.5%) respondents had informal training. 5(2.5%) respondents had internet connection in their health facility while majority of the respondents 195(97.5%) did not have.

Table 4: Extent of Utilization of ICT Knowledge

Items	VGE	GE	E	Not at all	Mean	Decision
Do you know how to operate a computer and their accessories	180	9	7	4	3.83	VGE
Do you know how to surf the internet	190	7	3	0	3.94	VGE
Do you know how to set tele, audio, and video conference	185	10	4	1	3.90	VGE
Do you know how to operate computer software packages such as spreadsheet, blood analysis, SPSS diagnostic groups, health management or process software and presentation graph programmes	187	8	5	0	3.91	VGE
Do you know how to enhance data storage using ICT	189	6	3	1	3.91	VGE

The mean value from 3.5 and above implies VGE, 2.5-3.4 implies GE, 1.5-2.4 implies Extent and less than 1.5 implies not at all.

Table 5: Benefits of ICT

Items	Frequency	%
In your opinion what are the benefits or usefulness of ICT		
Using ICT makes lesson more interesting	200	100
Using ICT make health enlightenment teaching more enjoyable	200	100
Provides new stimuli	200	100
Provides systematic/steady feedback in learning	200	100
Provides access to rich sources of information	200	100
Gives me more confidence	200	100
Gives me prestige	200	100
It helps to improve health practices	200	100
It helps to enhance health research and studies	200	100
It helps to enhance the development of professional networks	200	100
Improves efficiency	200	100
It enhances motivating benefits	200	100
It helps to acquire varied writing skills	200	100

The result in Table 5 shows that the respondents (health workers) had to a very great extent utilized the knowledge of ICT. All the respondents (Health workers) as shown in Table 4.2.1c agreed that all the listed items are the benefits of ICT.

Table 6: Extent of Application and utilization of ICT

Items	VGE	GE	E	Not at all	Mean	Decision
To what extent do you use printer and photocopy machine in the office	0	0	7	193	1.04	Not at all
Have you shared information to your fellow staff within the health facility using fax service	0	0	4	196	1.02	Not at all
Do you compile data and presentation slides using computer package	0	0	5	195	1.03	Not at all
Do you know how to operate health management or process software	0	0	4	196	1.02	Not at all
Do you use internet services and email in receiving and dissipating information in and around the health facility	0	0	5	195	1.03	Not at all

The mean value from 3.5 and above implies VGE, 2.5-3.4 implies GE, 1.5-2.4 implies Extent and less than 1.5 implies not at all.

The result as presented in Table 6: shows that ICT was not applied and utilized at all by the respondents (Health workers) in the studied health facilities.

Table 7: Challenges of ICT

Items	SA	A	D	SD	Mean	Decision
Health cost of ICT facilities	155	45	0	0	3.78	SA
Irregular power supply	155	45	0	0	3.78	SA
Poor infrastructure	150	50	0	0	3.75	SA
Poor internet connection	0	0	25	175	1.13	SD
Management problem	0	0	45	155	1.23	SD
Poor staff initiation	0	0	40	160	1.20	SD

The mean value from 3.5 and above implies SA, 2.5-3.4 implies A, 1.5-2.4 implies D and less than 1.5 implies SD.

In Table 7 the result shows that the respondents strongly agreed that health cost of ICT facilities, irregular power supply and poor infrastructure were challenges of ICT while they strongly disagreed to poor internet connection, management problem and poor staff initiation as being the challenges.

Analysis of the Hypotheses

Hypothesis One: There will be no significant relationship between utilization and level of awareness of ICT in healthcare services provision

Table 8: Chi-Square Analysis of the Relationship between Utilization and Level of Awareness of ICT

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.231 ^a	4	.873
Likelihood Ratio	1.171	4	.883
Linear-by-Linear Association	.328	1	.567
N of Valid Cases	1000		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.00.

The result of the analysis in Table 4.3.1 gave the calculated Chi-Square value of 1.231 and the probability (P) value of 0.873. Since the P=0.873 is greater than 0.05(level of significance), the null hypothesis was retained, hence, there is no significant relationship between utilization and level of awareness of ICT in healthcare services provision.

Hypothesis Two: There will be no significant relationship between ICT application and the quality of healthcare delivery. This hypothesis was tested using Pearson Product Moment Correlation Analysis (PPMC) as shown in the Table below;

Table 9: The Relationship between Application of ICT and Quality of Healthcare Delivery

Correlations		Application of ICT	Quality of healthcare delivery
Application of ICT	Pearson Correlation	1	.746**
	Sig. (2-tailed)		.000
	N	200	200
Quality of healthcare delivery	Pearson Correlation	.746**	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

The result in Table 9 shows the relationship between ICT application and the quality of healthcare delivery, this relationship was tested using Pearson Product Moment Correlation. The result of the analysis gave the correlation coefficient of .746 which shows that there is a strong and positive linear relationship between ICT application and the quality of healthcare delivery. The hypothesis tested at .05 level of significance gives the probability value (Sig) of .000. Since P = .000 is less than .05(level of significance), the null hypothesis is rejected, hence there is a statistically significant relationship between ICT application and the quality of healthcare delivery.

Hypothesis Three: There will be no significant difference between gender of the healthcare workers and utilization of ICT. The test was carried out using independents t test since male and females are independent variables.

Table 10: t test Analysis of Gender Utilization of ICT

Gender	N	Mean	Std Dev	t-calculated	df	P-Value	Decision
Male	48	12.21	0.60				
Female	152	12.27	0.58	0.82	198	0.731	H ₀ accepted
Total	200						

df = degrees of freedom (n_1+n_2-2), $n_1=48$, $n_2=152$, $p>0.05$

The t test result of the hypothesis tested at the .05 level of significance and 198 degrees of freedom yields a calculated t value of 0.82 and a P-value of 0.731. Since P=0.731 is greater than 0.05 (level of significance),the null hypothesis of no significant difference isnot rejected. Hence there is no significant difference between gender of the healthcare workers and utilization of ICT.

Discussion, Conclusion and Recommendation

Discussion of major findings

The findings of this study are enormous as much discovery was made which were either in line with literature or serves as new line of thinking. The major findings of this study are discussed in line with the

research objectives and hypothesis that were formulated to guide the study. Specifically, the findings were discussed according to the following subheadings:

Respondent demographics

The study demographically revealed that majority of health workers that participated in the study were within the age boundary of 31 - 40 years with a mean age of 35.5 years and where mainly female who had a working experience of 11-15 years. This findings are

synonymous with that reported by Ibrahim, et al., (2014) who reported that female with their age range between, 40 and above was the most predominant than the male in their own study, the study also goes in line with the works of Sukumset al., (2014) who reported that the predominant age group was those within 20 – 34 with 44.5%, has their working experience and that they were mainly female. Thus this study is gender biased and the respondent are matured in terms of age and working experience, hence the response they supply can be describe as the true nature of things.

ICT Literacy

Another findings from this study is the fact that majority of the health workers sampled are all aware of ICT use in health and are equally ICT literate even though it does not translate in their work, and the reason for that according to this study is chiefly due to the absence of ICT centers in the health institution, other reasons were financial problems, less attention to ICTs and time shortage. This findings are in cognizance with that of Idowu et al., (2003) among health personnel in Nigeria, they reported that while ICT capabilities(personal computers, mobile phones and internet) where available in Nigerian hospitals, it is spreading without

effective translation on the Nation health system. Adeyoyin, et al., (2009) also affirmed the findings of this current study in that they both share that ICT among the respondent but this does not have any meaningful impacts on the health institution system. However, earlier studies by Adeyemi and Ayegboyan (2004) have presented a contrasting result, in their surveys involving four general hospitals, 10 primary healthcare centre's and 6 private hospitals in Nigeria, only 5% of the health workers are ICT literate as many of them do not even have any ICT gadget. Adeyemi and Ayegboyan (2004) revealed that only 7% of the surveyed health workers in Lagos, Nigeria have good knowledge of ICT. The improved knowledge level as demonstrated in this study might be as a result of the growing awareness of the importance of ICT in healthcare delivery. The report of Asemahagnet et al., (2015) also goes against the

findings of this current study in that 55.0% of health professionals in their own study area were ICT illiterates due to the absence of ICT training center, monetary problem, time shortage and less attention to it, which incidentally happen to be the reason behind the lack of translation of the literacy of ICT into the works activities of these health personnel.

Knowledge about and extent of ICT

The study also investigates health workers knowledge about ICT, and the findings emanating from the study revealed that majority of the health workers have received training on ICT which were formal training. But this training has not been fully utilized in the health institution because they don't have internet connection inside the health facility. While on the extent of ICT utilization, the study revealed that majority of the health worker knows are to operate a computer, surf the internet, set tele audio and video conference, and how to enhance data storage using ICT to a very great extent. This finding of this study is in total agreement with that of Olatokun and Adeboyejo (2009) who affirmed that majority of health worker in Nigeria knows how to operate ICT and knows how to use the internet services daily, even though it is not often present in their work place their knowledge of operating ICT may have been either from personal effort or the presence of many computer teaching centers in Nigeria.

Benefit of ICT

Findings from this study also revealed that using ICT makes lesson more interesting, make health enlightenment teaching more enjoyable; provide new stimuli; provides systematic/steady feedback in learning; provides access to rich sources of information; gives me more confidence and prestige; helps to improve health practices; enhance health research and improve efficiency among others too numerous name. this findings compliment the works of Bello, et al., (2014); on the extent of application and utilization of ICT this study revealed that majority of the health workers seems to be of the opinion that they don't use the printer and photocopy machine in the office; they don't share shared information to your fellow staff within the health facility using fax service; they don't know how to operate health management or process software.

Challenges of ICT

Some of eh major challenges put revealed in this study are health cost ICT facilities, irregular power supply, poor infrastructure, poor internet connection and poor staff initiation , these findings were not much of a difference from that complain by Ibrahim et al., (2015); Zakaria et al., (2010) and Titus (2014)

Conclusion

This study concluded from its findings that greater numbers of health workers in the study area are becoming aware of the use of ICT in health institutions and to increase the effectiveness of health care services delivery. Health workers' ICT knowledge and attitudes have an important bearing on the uptake and utilization of ICT in the workplace. In this study, most health workers in the study area primary health facilities had ICT knowledge, they had also positive attitudes and expressed willingness to adopt the technology.

Since ICTs play a central role to deliver timely and evidence based quality healthcare services, the majority of health professionals accessed and used ICTs inadequately to manage their patients in this study. More than half of the respondents were ICT literate however are poorly initiated to the use ICTs. Socio demographic (Age), skill related problems (ICT, training), infrastructural (poor computer access, absence/poor internet connection, setups, resource constraint) and management style were important factors in limited ICTs utilization. Improving the infrastructures, management, computer access and literacy, internet connection and training/ICTs awareness is important to improve ICTs utilization among the health professionals in the study area.

Recommendation

The following recommendations are made in view of the findings and implication of the study.

- ❖ The problem of high cost of ICT, needs to be addressed especially health workers in order for them to better access and use the ICT materials.
- ❖ Correcting the problem of no or little access of students to ICT requires a holistic approach on the part of the government and the health workers.
- ❖ In order to ensure better exploitation of ICT, the management of the Primary Health Care Departments should invest in acquisition of ICT, both hardware and software in sufficient numbers to cover the ICT needs of both workers and staffs in the health centers. Investment in maintenance is also required.
- ❖ The P.H.C administration should ensure that she sets up a monitoring team competent in ICT, to ensure ICT use during working and assessing of computers.
- ❖ Both students and teachers need on-going ICT related training which will assist in significantly developing their ICT skills, improve access to needed information and enhance efficiency in their place of work (health centers)

Finally, the government, the and all stakeholder should provide adequate and current ICT equipment,

services and related materials such as regular power supply relevant in the education industry with a view toward increasing availability and access to ICT in particular.

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EFFECTIVENESS OF COMMUNITY PARTICIPATION IN RURAL HEALTH SERVICES, DEVELOPMENT, ASSESSMENT AND ORGANIZATION IN RUMUOLUMENI COMMUNITY, O BIO-AKPOR L.G.A RIVERS STATE.

Samuel Afekefere

College of Health Sciences

Novena University, Ogume, Delta State, Nigeria

In collaboration with:

Health Research Institute

Nic Maurice Colleges of Health, Management, Sciences & Technology, Amamong, P.M.B 1006 Okobo, Okobo Local Government Area, Akwa Ibom State.

ABSTRACT

This evaluation study examined the collective involvement of the local people needs and organizing strategies to meet this needs in Rumuolumeni Community, an oil rich area where agriculture is of the major livelihood activity. Questions were raised with the objective of ascertaining their knowledge, examining how projects were being maintained and the factors that influenced them. Questionnaires were used in gathering data from over 400 respondents. Results showed that 346 (86.5%) had knowledge while 54 (13.3%) did not. In non availability of these project, it was disclosed that lack of government presence or negligence, lack of fund, non-involvement of the community, and lack of interest by the community displays 46%, 20%, 18% and 13% respectively. Using chi-square test of relationship, at the level of significance 0.05 and 5 degrees of freedom and a value of 0.000 revealed a statistically significant relationship between community participation and rural health services in the study area. It is therefore recommended that rural people must often be consulted, sensitized and made aware of what provision and execution if successful health projects is to be established. Moreover, women should be allowed to be actively and deliberately involved in community developments.



Introduction

The term community participation is commonly understood as the collective involvement of local people in assessing their needs and organizing strategies to meet those needs (Nkwakeet al., 2013). The importance of community participation in rural health service development is uncontested. The rural health policy framework Healthy Horizons Outlook (Maluka, et al., 2011) includes the principle, 'participation by individuals, communities and special groups in determining their health priorities should be pursued as a basis for successful programs and services to maintain and improve their health'. The document also states that 'social capability and the physical capacity to plan and implement local programs are required for communities to improve and maintain their health' (Campbell and Scott, 2011). The origins of the concept of community participation in rural health lie in its application by international organizations, such as the World Health Organization (2011) in developing countries in an attempt to improve health, social and economic conditions. Rifkin was a major contributor to the conceptualization of community participation as bottom up or top down and promoted bottom up participation as fundamental to community health development (WHO, 2011).

Participation is all about inclusiveness, social justice and common good which shows that rural health development is community based when people in communities determine their health needs and aspiration. This is because it is realized that by so

doing large numbers of marginalized rural people can be "reached" effectively by the government and other types of developmental projects supported by international agencies like Food and Agricultural Organization and World Health Organization (WHO and FAO, 2011). The improvement in living standard of people through popular participation is thus central to the concept of rural health development (Ogunleye-Adetona, et al, 2013). Therefore, community participation serves as pivot for whatever successful process rural health development is trying to achieve in rural communities. Rural health infrastructures are indeed the pivot of rural development because they increase health services, productivity and income, improve rural living conditions and facilitate spatial integration of rural settlements into national development landscape (Bankole, 2014). Rural development is achieved through tangible projects and resource distribution.

Statement of the Problem

Obio-Akpore local government area of River State is an oil rich area yet agriculture is a major livelihood activity for rural dwellers. Oil and gas alone have generated 40% of Nigeria's national GDP over recent decades but (Adesope, et al, 2014) observed that rural health services is particularly a spate of youth disturbances and particularly serious in the oil rich region, perhaps because of the low level of rural health development leading to poor health delivery to the rural dwellers and also inaccessibility to minimum basic health facilities and services. Improving rural health development projects is one of the greatest

challenges facing many rural dwellers at present. Although Obio-Akpor local government council have already executed and still have some on-going projects as strategies for rural health development, the pattern and level of community participation in such projects are yet to be appreciable. Nhlakanipho (2010) also opined that the rural poor have not really participated in sharing the benefits from the enormous development efforts of the last three decades in proportion to their needs. Unless the rural communities are given opportunities to participate in rural development interventions designed to improve their condition of living, the level of spatial inequalities among regions will tend to increase. It therefore becomes of research interest to analyse the effectiveness of community participation in rural health services, development, assessment and organization in Rumuolumeni community of Obio-Akpor local government area of River State, perhaps absence of community participation may be a factor in the under achievement of the desired objectives and this calls for the present study.

What inspired this study is that the presence of rural development project is not strongly felt in most rural communities, of which Rumuolumeni community of Obio-Akpor local government area inclusive. This has resulted in the inaccessibility of most rural dwellers to some health facilities and services. Also, most basic facilities are urban concentrated and rural dwellers denied (Oyebanji, 2012). For instance, out of thirty-five health facilities managed by the state Hospital Board in Rivers State, only one is in Rumuolumeni urban centre and none in any of the rural community. More worrisome is that poverty has made lot of rural dwellers not to have means to access long distance health services in the outskirt of the rural communities because most projects are sited in majorly urban centres.

Justification of the Study

The thrust of this research is to assess the effectiveness of community participation in rural health services, development, assessment and organisation in Rumuolumeni community of Obio-Akpor LGA of Rivers State. Considering the fact that about 60 percent of Nigeria's population in general is engaged in Agriculture and Obio-Akpor in particular. The rural areas unlike the towns and cities lack access to these health facilities. This has been a major challenge especially due to unmotorable roads, long distances and poor income levels. Therefore to bridge the access gap is laudable. After a decade of piloting and subsequent rollout to most rural areas in Nigeria, many community partnership programme of the Federal Ministry of Health (FMOH) objectively strategies to ease access to health facilities by rural dwellers. Rumuolumeni community however is an

example of an area within a resource endowed region where the population are experiencing relatively high incomes as well as many health facilities including a teaching hospital rather concentrated in the heart of the State capital, while they remain neglected. This study is expected to help outline the possible solutions which may be employed to shape policy and the future of the community participation programme as well as other initiatives of the Nigerian Health Service. In the rural communities, especially in the midst of paucity of available literature.

Research Question

In view of the statement of research problem, the following questions are posed:-

- What is the effectiveness of community participation in rural health service delivery in Rumuolumeni community?
- What is the knowledge of community participation amongst Rumuolumeni indigenes?
- What health projects are sustained/maintained in Rumuolumeni community?
- What are the factors that adversely affect community participation in community development?

Broad Objective

The broad objective of this study is to determine the effectiveness of community participation in rural health services, development, assessment and organisational projects in Rumuolumeni community of Obio-Akpor LGA, River State. However, while the specific objectives of the study are to:

- To ascertain the knowledge of community participation in the study area.
- To examine how projects are being sustained/maintained in the community study area.
- To ascertain the factors that may adversely affect community participation in the study area.
- To determine the effectiveness of community participation in rural health service delivery.

Null Hypothesis

There will be no significant relationship between community participation and rural health services in the study area.

Literature Review

This chapter dealt with the concepts of community participation, community development and rural health services, rural health development, rural health assessment and rural health organisation as well as the theoretical framework that informed this study. It also synthesizes literature that was reviewed by the researcher about participation and the subject community participation in rural development projects in Obio-Akpor LGA.

Conceptual Framework

Community health Development

The concept of community health development is viewed as an approach to community health participation in rural development views community development as a means of improving rural welfare, training people in rural administration and extending government control through rural self-help activities. It focuses on the method whereby the desired change in the strategy of rural development, could be brought about in the rural communities as seen by (Theron, 2012). Again community health development is a process whereby rural dwellers are enabled to mobilise, manage forces and resources in rural communities by creating opportunities for democratic decision making, active participation and cooperation, self-help, development of leadership and utilisation of health opportunities to promote the intrinsic potential and forces in the community as a whole.

For community health development to occur, people in a community must believe that working together can make a difference and organise to address their shared health needs collectively (Adam, et al., 2014). Community health development often is associated with terms such as community health capacity building, community vitality or empowerment. The concept also could be regarded as community education in some circles or community organisation in others.

These diverse terms narrow down to Community Participation i.e. active involvement of people at the rural community level to either oppose or support a rural development programme or project. Community health development is regarded as a method, a programme and a movement. The approach is aimed at enabling and encouraging communities to become involved with the necessary support from the private and government sectors, in improving and managing their own living conditions in the areas of health (Lombard, 2014). Hence, one of the cornerstones to democracy should be participatory decision making process because it could be of great benefit to those in government (Laah, et al., 2014). Community health development cannot take place if there is no participation by the community because the role and concept remains a main indicator for community health development and rural health development.

Rural health services and Development

Rural health service and development include activities such as planning for, creating access to, implementing, and evaluating health services. It also includes creating access to health and operationalisation of all types of community-based

health programs including health promotion, health planning, priority setting and community capacity building. It can be described as an interdisciplinary study of health and health care delivery in rural environments. The concept of rural health incorporates many fields, including geography, midwifery, nursing, sociology, economics, and tele-health or telemedicine. Studies shows that the healthcare needs of individuals living in rural areas are different from those in urban areas, and rural areas often suffer from a lack of access to healthcare. These differences are the result of geographic, demographic, socioeconomic, workplace, and personal health factors. For example, many rural communities have a large proportion of elderly people and children. With relatively few people of working age (20–50 years of age), such communities have a high dependency ratio. People living in rural areas also tend to have poorer socioeconomic conditions, less education, higher rates of tobacco and alcohol use, and higher mortality rates when compared to their urban counterparts. There are also high rates of poverty amongst rural dwellers in many parts of the world, and poverty is one of the biggest social determinants of health.

Rural health services PHC is essential healthcare based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system of which it is the central function and the main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing healthcare as close as possible to where people live and work, and constitutes the first elements of a continuing health care process.

The concept of health development has been defined as any planned combination of educational, political, regulatory and organizational support for actions and conditions of living conducive to the health of individuals, group or communities (Green and Kreuter, 1991). Implied in this definition is the view that health development is predicated on a number of strategies including educational, political and several other social factors. Health development in any society is also believed to be a function of the existing policy content on ground (Klein, 2012). Obinne et al., (2010) perceived rural health services and development to involve creating and widening health facilities and opportunities for rural dwellers to realize

their full potential through sharing in decision and action which affect their lives while Kakumba et al., (2008) states that rural health services and development is used to refer to schemes aimed at improving the countryside or peripheral areas, with a characteristic agrarian population.

Rural development encompasses all aspects of human life in the rural area and deals with range of activities involving the mobilisation of resources in order to empower the people to break away from all structural disabilities that prevent them from enjoying better living conditions. It involves the development of the poorest sector of society, the sick, depressed, unemployed, less-educated, misinformed, and the disadvantaged (Katar, 1999 cited Robert, 1983). It can be described as a work in progress, a process of transformation, a moving target and a continuing desire to be better. However, rural dwellers can only develop themselves by participating in rural development project planning process and implementation which affect their well-being (Katar, 1999 cited Robert, 1983). One of the primary tasks of all governments is to improve the welfare of those in rural areas like Rumuolumeni in Obio-Akpor LGA which in many countries including Nigeria are the majority of the population. The concept of rural health development is the strategy that has been designed to embrace this need (Rivera, 2010).

Community Participation

Community or public participation in health may be defined as the process by which members of the community either individually or collectively and with varying levels of commitment: (a) develop the capability to assume greater responsibility for assessing their health needs and problems; (b) plan and then act to implement theirs solutions; (c) create and maintain organizations in support of these efforts and (d) evaluate the effects and bring about necessary adjustments in goals and programs on an ongoing basis. It is therefore a strategy that provides people with the sense that they can solve their problems through careful reflection and collective action (Zakus et al., 1998).

The concept is also defined by Tsouros (2002) as a process by which people are enabled to become actively and genuinely involved in defining the issues of concern to them, in making decisions about factors that affect their lives, in formulating and implementing policies, in planning, developing and delivering services and in taking action to achieve change

Aslin & Brown(2002) define community participation as "a wide range of practices suited to different situations or purposes, guided by a common set of

values, principles and criteria." The above definitions of the concept according to Judd et al. (2001.) bring to the fore certain fundamental elements of participation which often emphasize "involvement, empowerment, capacity building, multidisciplinary collaboration, equity and sustainable development". Although there is no clear consensus on the distinction between the above terms as cautioned by WHO (2002), it is useful to briefly clarify their meanings as they are often used interchangeably with oralong-side participation.

Consultation: this often forms an integral part of statutory urban and rural planning processes and involves people being referred to for information and asked their opinions. Although this implies that communities' views may betaken into consideration, it does not generally mean that people are actively engaged in the decision-making process.

Involvement: this is a term often used synonymously with participation. It implies being included as a necessary part of something.

Empowerment: is a process whereby individuals or communities gain confidence, self-esteem and power to articulate their concerns and ensure that action is taken to address them. The practice of empowerment draws inspiration from the philosophy of conscientization

Community capacity-building: is development work, involving training and providing resources that strengthens the ability of community organizations and groups to build structures, systems and skills that enable them to participate and take community action

Sustainable community development: is a way of working underpinned by commitment to equity, social justice, participation and empowerment that enables people to identify common concerns and that supports them in taking action related to them. It also takes over a long period of time if not forever.

The distinct approach to community participation reflects different degree of participation

- i. Contributing: community member provide money, labor, or material for health project
- ii. Consulting: community member are asked for their view and are informed of project plans in order to secure their commitment and contribution to construction, operation and maintenance
- iii. Managing: community member actively participate in decision making and in controlling community resources and are engaged in project identification, planning, Organization, implementation, monitoring and evaluation In this study, people's participation in community

health services and development activities is a process by which individuals are involved in initiating, deciding, planning, implementing and managing of rural health development interventions provided. It is a process of social development in which people, as subject in their own environment, seek out ways to meet their collective needs, expectation and overcome their common problems. Community health participation is essential for the rural health development in Rumuolumeni community of Obio-Akpor LGA because the approach is a form of mobilisation to achieve health related goals (Aref, 2009). Overall, health participation in this literature has been used to describe many kinds of health promoting services and development activities and processes carried out. Community participation therefore is viewed as a basis for project success. Having examined community health development, rural health development and community health participation, it is evident that the success of rural health development projects is tied to these three because these are concepts that can embrace the need of rural dwellers in the rural communities.

Theoretical Framework

The push for decentralisation has been the involvement of rural dwellers in development process. The underlying assumption is that placing more power and resource at the bottom (rural people) will enhance the development of rural communities because the rural dwellers have knowledge of basic amenities lacking (Bergh, 2004). Their preferences are believed to give a more adequate picture or perception of their needs than relying on perception of the partnering agencies. It is also normatively assumed that satisfaction of basic rural needs should take precedence over all other development thought and initiatives. Again, if government officials are more accountable, rural dwellers will be willing to participate in planning and development process (Bergh, 2004). This type of relationship between communities and development health facility and agencies has great impact because it considers the rural dwellers specific request. In this situation, the rural dwellers are more committed since their preferences are respected. Besides, the support from these kind of development health facilities and agencies has less bureaucratic procedure in comparison to those found in the top – down or government administrative system.

Approaches of the Paradigm Shift

The two approaches of the paradigm shift which are termed top – down and bottom – up are reflections of development perspectives at different times and each has its own characteristic (Rafiu, 2007) as regards to

community participation in rural health development projects.

Top – Down: Approach is an approach that just as the name implies sees actual implementation of health services and development interventions from the point of view of the authoritative decision. They feel that this authoritative decision should be the starting point for any form of participation in rural health development intervention in the rural communities. These „main actors' at the detriment of others are seen as the most relevant to producing desired effect (Matland, 2005). This approach makes the authoritative decision makers feel they are responsible to formulate the kind of statute that suits the existing problem in the rural community. However, they are criticized because of their bureaucratic decision making and policy implementation aspect that are devoid of rural dwellers input. It also treats other project implementation process as if there is none other opinion concerning rural development solution.

Bottom – Up: This Approach is an approach put forward by Stohr and Taylor (1991) in rigorous search for solving rural problems of neglect, under – privileged and deprivation. It seeks to remove draw – backs of centre - down which concerns controlling the back wash effects of localization of economic growth and development (Adefila, 2012).

In contrast to top – down, they acknowledge fact that implementation think about the rural development intervention to be provided that rural dwellers also have a choice of forming their own opinion about the idea. They can also receive and change any given programs in order that suits them, improve them or adapt them better to real circumstances. They not only recognize this behaviour but state that it is even positive to successful rural development project as workers connected with the actual situation have better judgment than the policy maker who does not have same information as they do (Wellington, 2010).

In Obio-Akpor LGA, of Rivers state, Nigeria, it is truism that the gap between rural communities and government tertiary health institutions is immeasurable. The government tertiary health institution and facilities are at one extreme and the rural dwellers at the other. The reason for this often a time is because the rural dwellers are dependent ration with many of them very poor. This is the basic health needs theoretical approach meaning the provision of the people's minimum requirements. These needs can be wholly or partially achieved through infrastructures and amenities health care centres, clinics, Teaching hospitals and Specialist hospital. Several theorists, including Abraham

Maslow, Frederick Herzberg, David McClelland and Clayton Alderfer provided theories to help explain further that basic human needs stems from the understanding that all motivation comes from an individual's desire to fulfil or achieve a need (McClelland, 1965; Alderfer & Associates, 2010). Redmond (2010) also sees the basic human needs as the most important and broadest. These basic human needs theory stipulates what rural dwellers needs are. The emphasis is on rural development from the rural dwellers perspective and their mental, physical and social well-being, rather than looking at economic growth in terms of GNP (Iyoha, 1999).

Factors influencing increased community participation in health service delivery

Community participation is gaining centrality in health decision-making and delivery systems in recent times around the world and appears to be driven by a variety of factors. Zakus et al., (1998) identify some of these factors to include (a) the recognition of the duty of people to participate in public and community affairs, including personal health (b) institutionalized health systems' inability to provide for all health related needs (c) recognition that planned social changes in health can only be achieved by focusing on the community as the focus of attention (d) diminished confidence in policies made solely by health experts, professionals and program managers (e) concerns about the cost associated with health services, the best use of limited resources (f) perceived untapped resources of voluntary public input to improve health services, and the belief that such input can make a positive difference and (g) rising standards of living and increasing education levels, and an awareness of this among the poor all leading to raised health expectations

According to Qingwen Xu, (2007) the recent interest in community participation is premised on the perceived benefits that participation brings to programs in terms of added efficiency, sustainability, and collective community power. This point is carried further by Zakus et al., (2008) who assert that one of the benefits of community participation is its widely reputed health and social participation. They argue that health services are provided at a lower cost, and added resources can be brought into the system, in part due to greater access to fundraising opportunities and the availability of volunteers.

Modes and Levels of Community Participation

Community participation can operate at several different levels. Rifkin (1990) explains participation in the area of health by differentiating the various levels of participation. In the view of Rifkin, community members can participate on a minimal scale or

passively in the benefits of health interventions in the form of services of education. They can participate in health interventions at the second level by supporting health facilities such as in-kind or cash contributions as well as taking up roles and responsibilities as health providers. At the third level, Community members take up managerial responsibilities and decision-making on managing activities. The fourth level involves monitoring and evaluation of programs whilst the fifth level of participation offers the opportunity for community members to plan and translate their own felt needs into true grassroots development. According to Rifkin, participation at the fifth level represents higher community participation as community members actually decide the health activities they think should be undertaken and ask for assistance from health authorities or government to facilitate implementation. The ability of the community to initiate development projects on sustained basis is a demonstration of their maturity in participation

It is important that the modes of community participation in rural development process is known (Theron, 2005) because this is to ensure authentic community participation. The approaches become more relevant when the impact of participation is assessed in relation to a programme or rural development project, and the extent of participation becomes a central feature in this regard (Fokane, 2008). Understanding the modes of participation is of great importance because these overlap with the levels of community participation and are necessary for community participation. Theron (2005) highlights these modes as follows:

- Anti-participatory mode - community participation is considered as a voluntary contribution by the community to a project, which will lead to development, but the public is not expected to take part in shaping the project content and outcomes.
- Manipulation mode - community participation includes community involvement in decision making processes, implementing projects, sharing in the benefits and involvement in efforts to evaluate such programmes.
- Incremental mode - community participation is concerned with organized efforts to increase control over resources and regulating institutions in given social situations for groups or movements excluded from such control and
- Authentic public participation mode - community participation is an active process by which the community influences the direction and execution of projects with the view to enhancing their well-being in terms of income, personal growth, self-reliance or other values which they cherish.

Forms of participation

Pretty (1995) identifies seven forms of participation. These range from passive participation or tokenism where people participate by being told what is going to happen or has already happened to self-mobilization where people participate by taking initiatives independent of external institutions to change the system. The second form according to Pretty's typology is participation in information giving where people participate by answering questions posed by extractive researchers. People do not have the opportunity to influence proceedings as findings of the research are neither shared nor checked for accuracy. The third is participation by consultation. Under this type people participate by being consulted by external agents who listen to their views. These external agents define both problems and solutions and may modify them in the light of people's responses. Such consultative process however, does not grant any share in decision-making and professionals are not obliged to take on board people's views. The fourth type is participation for material incentives.

Under this form, people participate by providing resources such as labour in return for food, cash, or other material incentives. Many programs on education, agriculture, environment and health fall under this category. It is very common to hear this being called participation, yet the people have no stake in prolonging activities when the incentives end. The fifth form is functional participation where people participate by forming groups to meet predetermined objectives related to a project which may involve the promotion of externally initiated social organization, whilst the sixth type is interactive participation where people participate in joint analysis which leads to action plans and the formation of new local institutions or strengthening of existing ones. From the above discussion, it can be said that the type of people who are likely to become involved in community mobilization efforts and the motives for such participation largely influence the form of participation.

Importance of community participation in health service delivery

Community participation according to WHO (2010) is a fundamental principle of both Local Agenda 21 and Healthy Cities. It is important for many reasons and offers many different benefits for individuals, communities, organizations and society at large. From the communities and citizens perspective, participation is relevant because they have a right to be involved in decisions that affect their lives, they know more about where they live, what they want and what is best for them than outsiders, they want to be actively involved and have an influence due to the

diminished confidence in policies made solely by health experts, professionals and politicians. Professionals working in health authorities and other organizations also advance range of arguments to the effect that;

- Community participation can help target resources more effectively and efficiently.
- Involving people in planning and delivering services allows them to become more responsive to need and therefore increase uptake.
- Community participation methods can help develop skills and build competencies and capacities within communities.
- Involving communities in decision-making leads to better decisions being made, which are more appropriate and more sustainable because they are owned by the people themselves.
- Community participation is a way of extending the democratic process of opening up governance and of redressing inequality in power.
- Community participation offers new opportunities for creative thinking and innovative planning and development.

In sum, community participation from the view point of citizens and professionals provide a convincing argument for giving it priority as an active two-way process that can be initiated and sustained by communities and health authorities. It can increase democracy, empower people, mobilize resources and energy, develop holistic and integrated approaches, achieve better decisions and more effective services and ensure the ownership and sustainability of programs.

Effectiveness of Community Participation

Attempts have been made to develop tools to assess the effectiveness of community participation, taking into account many of the complexities. Increasingly, and especially in rural development research, there has been a search for validating measures, or indicators, which can discriminate whether policy action has been justified. Burns and Taylor (2000) provide tools and appraisal exercises for measuring the effectiveness of participation. They include:

- i. History and patterns of participation
- ii. Quality of participation strategies adopted by partners and partnerships.
- iii. Capacity within partner organizations to support community participation.
- iv. Capacity within communities to participate effectively.
- v. Impact of participation and its outcomes.

Wilson and Wilde (2003) describe the starting point for the research as being recognition of the heterogeneity and elaborate nature of communities and the need for qualitative analysis that measures

progress from diverse perspectives.

The Merits of Community Participation

Kakumba and Nsing (2008) had remarked that community participation ensures rural dwellers involvement in a wide range of administrative policy-making activities, including the determination of levels of service, budget priorities, and the acceptability of physical construction projects in order to orient government programmes toward community needs, build the entire public support, and encourage a sense of cohesiveness and humanity within the society. The common belief is that involving rural dwellers in rural development projects have the potential to boost their livelihoods and foster development in their area (Kakumba et al., 2008).

Community participation empowers the primary beneficiaries of rural development programmes or project by helping them to break away from a dependency mentality (Ogunleye – et al., 2013). Generally, rural health development interventions are funded either by government or by donor agencies. Experience has shown that rural health development interventions from external assistance projects usually fail to sustain the required level of development activity once support or inputs are diminished or withdrawn by funding agencies. Such scenario is evidenced in most non-functional/ abandoned community projects in Rumuolumeni community of Obio-Akpor local government area of Rivers State. Community participation is regarded as an essential prerequisite for the continuity of activities. The involvement of rural and utilisation of rural resources generates a sense of ownership over rural development interventions to rural communities. This sense of ownership is essential for even after external funds cease to flow (Kumar, 2002).

Obstacles to community participation in health

The apparent gap between the promise of enhanced participation on one hand, and the everyday realities of participatory health delivery processes on the other, suggest the need to understand more fully the obstacles and dynamics to participation in health service delivery. Zakus et al., (1998) present a real problem to facilitators of community-based health programs. According to them, the manner in which community participation is expressed varies considerably with the context in which it is implemented.

Secondly, community participation has proven difficult not only to define but also to practically initiate and sustain. This is due to the fact that health initiatives reliant on public participation often place additional burden on the already disadvantaged

individuals and groups. There are important costs involved in participatory activities including personal cost expenditures, training cost and information compilation and dissemination cost. Thus, insufficient financial resources at the local levels constitute a critical barrier to community participation in health.

Another obstacle to community participation in health service delivery according to Zakus et al., (1998) is the fear harboured by community members that participation may provide an excuse for government to eliminate the local health centres and reduce funding for public health activities. Zakus et al., (1998) recommend an investment in the training of newmembers of community organizations In the domains of health planning and other managerial tasks. The fourth obstacle relates to the nature of communities. Communities in the view of Zakus et al., are very heterogeneous entities in their demographic composition, interest and concerns. Laverack et al., (2001) however, indicate that heterogeneous groups and individuals can actually become more of a "community" through the process of program planning to the extent that program aims and objectives reflect in part shared interest and needs of heterogeneous members. Individual, family or clan-based differences may then give way to cooperation as program participants create community identity around the tightly focused program objectives.

The obstacles to community participation include power relations between community actors and local health authorities, the competency level of health workers in facilitating participatory approaches, fears harboured by citizens of possible decrease in government support should they involve deeply in health services delivery, the negative conceptualization of community empowerment and participation in health promotion and finally inadequate knowledge and understanding by beneficiary community members of the health program being implemented in partnership with them.

Summary of the Reviewed Literature

It is evident that policymakers are concerned about improving the development of primary healthcare systems with the most recent example being Resolution which was accepted in May 2009 at the 62nd World Health Assembly, which urges WHO member states to strengthen their health care systems through the values and principles of primary healthcare. So far little attention has been paid to systematically monitor primary care development and this hinders identification and sharing of experiences. Creating an effective primary healthcare system is not a question of implementing one recipe since systems

are context dependent. Their development is to a large part shaped by a country's historical background, welfare state, health problems, characteristics of the health care system, and societal values and beliefs. Therefore, the strength of a country's primary healthcare system is determined by the degree of development of a combination of core primary healthcare dimensions in the context of its health care system. Nigeria having implemented and undergone a number of health care reforms. These reforms were targeted to ensuring easy access to primary healthcare services. However, the issue of inaccessibility of health care facilities especially in rural Nigeria remains unimproved. Health care delivery in Nigeria has therefore not been made accessible to all those who need it. The introduction of Community-Based Health Planning and Services is to achieve the objective of bringing health care to the door step of people; that is to enhance physical access to health care.

Methodology

Study Area

The study area is Rumuolumeni community in Obio-Akpor local government area in Rivers State.

Study Design

This study will make use of a social survey design, which will employ the use of questionnaire in eliciting required information. This approach was considered a good alternative to quantitative approach especially in the light of poor quantitative dataset. The visit will assist the researcher to make spot assessment of the community health projects and acquire relevant information about the activities of the community with respect to health services, development assessment and organisational projects.

Scope of the Study

The spatial scope of this study will be centred on the effectiveness of community participation in rural health services, development, assessment and organisation in Rumuolumeni community of Obio-Akpor of Rivers State. The selection of this community is based on the availability and accessibility choice of the researcher. The study focuses on community participation in rural health service delivery, development, assessment and organisation. The extent of the work includes, challenges encountered by community members, levels and forms of participation and effect of community participation on utilization of the health projects. Rural health development projects included in this study are availability of health facility, accessibility of the health facility, proximity of the health facility, health promotion schemes, community health advancement project, Development of human resource and

facilities for basic health care, Location of Health institutions, Empowerment of community members to access health care and health infrastructure.

Target Population

The target population is constituted by the entire indigenes of Rumuolumeni community in Obio-Akpor local government area of Rivers State which is 156,980 indigenes. Individual verbal consent was obtained from the respondents prior to data collection and permission for data collection.

Inclusion Criteria

All indigenes of Rumuolumeni community resident within the community within the last three years, the participants' ages are from 18 years and above of both sexes.

Exclusion Criteria

Individuals residing outside Rumuolumeni community will be excluded from this study.

Sample Size determination

A sample is a part of a population observed for the purpose of making scientific statement about the population. A sample is usually chosen from the population of the study when the population is too big to be studied as a whole. In view of this submission, the researcher will adopt a statistical model initiated by Yamani in Keyton (2001).

To determine the sample size of this study:

$$n = \frac{N}{1 + N(e)^2}$$

Where

n= the sample size

N = the study population = 156,980

E = Level of significance or (limit of tolerable error) i.e. 0.05

1 = Unity (a constant)

Therefore, we shall have

$$n = 399.99 \approx 400$$

The sample size of the population is 399 from the population of study

Sampling Procedure

The multi-stage random sampling technique will be employed to recruit 400 indigenes that are resident in Rumuolumeni community within the last three years. The decision to select 400 respondents from community was to meet up with the calculated sample size.

Validity and Reliability of the Instrument

The content validity and face validity of the research instrument will be established by giving the draft copies of the instrument, the specific objectives, research questions and the hypotheses of the study to five experts in the public health department of Novena University, Ogume. Their criticisms, advice and suggestions will be used in producing the final version of the instrument for data collection. While the reliability of the instrument will be determined through split-half method. Samples of twenty respondents from Sapele local government area whose area will not be selected for the study were exposed to the instrument. The returned copies of the text were split into two using odd and even numbered statements or questions.

Method of Data Collection

In order to facilitate access to the indigenes in the communities, a letter of introduction from the Head, Department of Public and community Health, Novena University, Ogume, seeking permission to carry out the research will be presented to the officers in charge of the establishments to be used. A brief letter explaining the purpose of the study will be attached to each copy of the questionnaire. Copies of the questionnaire were administered by the researcher and two research assistants. The two assistants will be given instruction on how to administer the instrument. The researcher and his assistants personally administered the questionnaire at various offices and collect the completed copies from the respondents on the spot. This will be ensuring that the respondents supplied independent responses. The research instrument (questionnaire) consisted of two types of questions: open-ended questions and close-ended questions. The researcher will also engage in a reconnaissance social survey to the sampled area.

Ethical Consideration

An ethical approval will be obtained sought from the Department of Public and Community health joint ethical committee of the local government prior to commencement of the study. The questionnaire will be administered by the researcher during visitation to their working place during working hours. Their consent was sought and obtained; confidentiality will be assured, and the protocol of the study will be explained to each participant. Upon consenting, all participants will be encouraged to answer the questionnaire in the presence of the researcher so as to be able to reduce items misinterpretation, and maximize the return rate

Method of Data Analysis

The returned questionnaire was properly cross-checked for completeness. Copies that were

incomplete or that have incorrect responses will be discarded. The information from the questionnaire will be coded using SPSS batch system to analyze the data. In determining the level of knowledge and attitude of the possessed by workers, the responses will be marked and graded over one hundred (100) per cent. Subsequently, the average score (performance) of the respondents on each sub-scale will be divided by pooling together the individual scores on such sub-scales and dividing by the number of respondents involved. The resultant average score will be used in each case as an index of Ashur's Criteria (Ashur, 1977).

Data Presentation and Results

Analysis of Demographic Data of the Respondents

Table 1: Summary of the Respondents' Demographic Data

Variables	Frequency	Percent (%)
Ward		
4	56	15
14	40	10
15	98	24.5
16	59	14.8
17	147	36.8
Total	400	100
Sex		
Male	163	40.8
Female	237	59.2
Total	400	100
Age		
Under 20	56	14.0
21-30	133	33.3
31-40	98	24.5
41-50	73	18.2
51 and above	40	10.0
Total	400	100
Marital Status		
Single	68	17.0
Married	193	48.3
Separated	89	22.2
Widowed	24	6.0
divorced	26	6.5
Total	400	100
Educational Qualification		
Formal	64	16.0
Primary	32	8.0
Secondary	181	45.3
Tertiary	123	30.7
Total	400	100
Years spent in the community		
1-5	49	12.3
6-10	133	33.2
11-15	130	32.5
16 and above	88	22.0
Total	400	100

In Table 1, the result shows that 56(15.0%) respondents were from ward 4, 40(10.0%) from ward 14, 98(24.5%) were from ward 15, 59(14.8%) respondents were from ward 16, and 147(36.8%) were from ward 17. The majority of the respondents numbering 237 representing 59.2 percent of the respondents were female while 163(40.8%) respondents were male. 56(14.0%) respondents were 20 years and below, 133(3.3%) respondents were in the age range of 21 and 30, 98(24.5%) respondents were in the range of 31 and 40, 73(18.2%) respondents were between the ages of 41 and 51 years and 40(10.0%) respondents were 51 years and above. Respondents who were single were 68(17.0%), 193(48.3%) respondents were married, 89(22.2%) of them were separated, widow/widower were 24(6.0%), and 26(6.5%) respondents were divorced. 49(12.3%) respondents have lived in the community for not more than 5 years, 133(33.2%) have lived for 6-10 years, 130(32.5%) have lived in the community for 11-15 years, while 88(22.0%) respondents have lived in the community for 16 years and above.

Data Presentation

Table 2: Community Participation in Rural projects

Variables	Frequency	Percent (%)	
Idea or knowledge of rural health project			
Yes	346	86.5	
No	54	13.5	
Total	400	100	
Available project in the community			
Primary healthcare	232	58.0	
Health institution	56	14.0	
Clinic	40	10.0	
Specialist hospital	8	2.0	
Others	Immunization	24	6.0
	No project	40	10.0
Total	400	100	

The result in Table 2 shows that 346(86.5%) respondents had knowledge of rural health project, while 54(13.5%) did not have. The available projects in the communities were PHC, health institution, clinic specialist hospital and others including immunization.

Table 3

Variables	Frequency	Percent (%)
Reasons for non-availability of project		
Lack of government presence or negligence	192	49
Lack of fund	80	20
Non-involvement of the community	72	18

Lack of care or interest by the community	56	13
Total	400	100
Participation of community members in rural development		
Yes	280	70
No	120	30
Total	400	100
The project participated in		
Clinic	35	8.8
Immunization	37	9.3
PHC	232	58.0
Specialist	96	23.9
Total	400	100
Community involvement in all the stages of the project		
Yes	264	66
No	136	34
Total	400	100
Reason for lack of involvement		
Lack of interest	136	100
Total	136	100

In Table 3, reasons for non-availability of projects were lack of government presence or negligence, lack of fund, non-involvement of the community and lack of care or interest by the community according to 192(49%), 80(20%), 72(18%) and 56(13%) respondents respectively. 280(70%) respondents said that community members do participate in community development, while 120(30%) of them said no to that. The health projects the community members participated in were clinic, immunization primary healthcare and specialist hospital according to 35(8.8%), 37(9.3%), 232(58%) and 96(23.9%) respondents respectively. 264(66%) respondents said community members were involved in all the stages of the project, while 136(34%) respondents said no to that. The reason for lack of involvement was lack of interest in those projects.

Table 4:

Variables	Frequency	Percent (%)
How the Community got involved		
Town hall consultation	232	58
Opinion leaders	80	20
Traditional rulers	64	16
Clubs/associations	24	6
Total	400	100
Reasons for project implementation		
Development	91	22.8
Health status improvement	287	71.8
To improve standard of living	22	5.4
Total	400	100
Attending meetings for community health projects		
Yes	304	76
No	96	24
Total	400	100
Involvement in community health project		
Yes	296	74
No	104	26
Total	400	100
Influence of community on the rural health project		
Project excellence 70%	24	6
Good 55-70%	200	50
Average 40-55%	88	22
Poor 40%	88	22
Total	400	100
Project performance rating		
	Excellence	Good
Community alone	76(19%)	324(81%)

In Table 4, the result shows that the community members got involved in the rural health project through town hall consultation, opinion leaders, traditional rulers and Clubs/associations as shown by the responses of 232(58%), 80(20%), 63(16%) and 24(6%) respondents respectively. According to 91(22.8%), 287(71.8%) and 22(5.4%), reasons for rural project implementation were for development, to improve health status and living standard of the people. 302(76%) respondents said they have been attending meetings for community health projects, while 96(24%) respondents have not attended before. 296(74%) respondents were involved in rural health projects, but 104(26%) respondents were not. The level of influence of the community on the rural health project according to 200(50%) respondents was good,

24(6%) respondents said it was excellent, 88(22%) respondents rated the influence on the average, while equally 88(22%) rated it to be poor. The performance rating of projects to some respondents was excellence but to the majority of the respondent, the projects were simply good. 256(64%) respondents said the communities chose their desired projects, but 144(36%) respondents said the communities did not have the power to choose what they want.

Table 5

Variables	Frequency	Percent (%)
Problems faced by community during planning and implementation of projects		
Management problem	83	20.8
Lack of cooperation	113	28.2
Lack of fund	204	51
Total	400	100
Training or awareness for the people on rural development project		
Yes	312	78
No	88	22
Total	400	100
Policy document on rural development that affects community participation		
Yes	264	66
No	136	34
Total	400	100
Is community participation a veritable tool for successful rural development		
Yes	400	100
Do you think you can play an important role in ensuring successful implementation of project		
Yes	328	82
No	72	18
Total	400	100
Methods the community can adopt to make community participation in rural health effective		
Town hall meeting	289	72.2
Sensitization	111	27.8
Total	400	100
Hindrance to community participation in rural development project		
Communal clash	89	22.2
Lack of cooperation	108	27
Lack of fund	132	33
Ignorance	71	17.8

The problems faced by the communities during planning and implementation of projects as shown in the Table 5 were management problem, lack of cooperation and lack of fund according to 83(20.8%), 113(28.2%) and 204(51%) respondents in that order. 312 respondents said there have been an awareness for the people on the rural development project, 88(22%) respondents said no to that. 264(66%) respondents said there are policy document on rural development that affect their participation, while 136(34%) said no to that. All the respondents agreed that community participation best tool for successful rural development. 328(82%) respondents believed that they can play an important role in ensuring successful implementation of rural health project, but 72(18%) of the said no to that. Methods the community can adopt to make community participation in rural health effective were holding of town hall meeting and sensitization according to 289(72.2%) and 111(27.8%) respondents respectively. Hindrances to community participation in rural development project were communal clash, lack of cooperation among members of the communities, lack of fund to support the project and ignorance of the people on the benefit of the projects ways of improving community participation in rural health development. Ways of improving community participation in rural health development according to 352(88%) and 48(12%) respondents were education and cooperation.

Test of Hypothesis

H_0 : There will be no significant relationship between community participation and rural health services in the study area.

Table 6: Chi-Square Test of the Relationship between Community Participation and Rural Health Services

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	66.761 ^a	5	.000
Likelihood Ratio	71.312	5	.000
Linear-by-Linear Association	23.598	1	.000
N of Valid Cases	2400		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 109.00.

The result of the hypothesis as shown in Table 6: tested using Chi-Square at 0.05 level of significance and 5 degrees of freedom gives the calculated Chi-Square value of 66.761 and the probability (P) value of 0.000. Since the P=0.000 is less than 0.05 (level of significance), the null hypothesis is rejected, hence, there is a statistically significant relationship between community participation and rural health services in the study area.

Discussion, Conclusion and Recommendations

Discussion

Findings from this study revealed that the highest respondents was from ward 17, the study was also gender biased with majority of the respondents been females which were within the age interval of 21 – 30 years and where married, having secondary school qualification as the highest academic qualification,

majority of the sampled respondents have spent 6-10 years within the community, hence they are quite knowledgeable about the happenings in the community. Another finding from this study is that the community participation in the rural health project was investigated and the result emanating from the study revealed that majority of the participant were of sound and knowledgeable idea of rural health project, and they affirmed that majority of the available rural project in the community were primary health care which is close followed by health institution, clinics, immunization centers and specialist hospital where the least rural health project within the studied local government area.

The study also revealed that the reasons for the non-availability of project in some of the wards sampled within the studied area is lack of government presence or negligence followed by lack of funds and lack of interest by the community. The study revealed that majority of the participant are of the opinion that the community members often participate in rural development projects which ranges from primary health care centres, specialist hospital, immunization centres and clinics (4.2.2.), the study further revealed that the community often get involved through town hall consultation, opinion leaders, traditional worshippers and clubs/associations and the reason for their participation and contribution is because they are aware that such rural health projects can bring about development, improvement of their health status and also improve their standard of living by enhancing their local economy. The influence of the community on the rural health project on a scale of 100 majorly scored 55 -70% while their project performance rating shows the community alone has a good rating, so also is government and non-governmental organization including joint project. The community often choose their desired project as revealed by the study (4.2.3) the result of this study are totally in line with the works of Brady et al. (2003) who reiterated that for a community to develop in terms of health wise it takes not just the community or government but the combine effort of government and communities in question with the community choosing their much need rural developmental project. The result of this findings are also in complete tune with that of Manandhar et al. (2004) who reiterated that empowerment and development can bring about and enhance rural health delivery.

The findings arising from this study also conforms with the previous argument of Preston et al., (2010) who reiterated that community participation is a vital tool to rural health delivery and that the knowledge and idea of it when well cultivated can bring about rural development, in his exact word "....The importance of community participation in rural health

service development is uncontested.....". And which should include includes the principle, 'participation by individuals, communities and special groups in determining their health priorities should be pursued as a basis for successful programs and services to maintain and improve their health', social capability and the physical capacity to plan and implement local programs are required for communities to improve and maintain their health'.

Community health participation is not without its different problem ranging as revealed in this current study that problems faced by the community during the planning and implementation of project are majorly lack of funds, lack of cooperation and management problem, thereby justifying the argument of Afolyan (2008) that for a successful achievement of rural health development projects to be recorded is dependent on rural dwellers change of attitude and values (Afolyan, 2008).

The study revealed that the respondents are of the opinion that they need training programmes or awareness programmes for the people on rural development project, just as they believe that community participation is a veritable tool for successful rural health development. Thus, shedding more light to the argument of Kilpatrick (2009) 'community involvement', 'community development' and 'community mobilization' are all veritable tool for the actualization of rural health developmental project, to him community engagement is as vital as the project is concerned. A further important finding that emanated from this current study is the fact that the respondents are of the opinion that they can play an important role in ensuring successful implementation of rural health projects.

An important finding of this current study is the hindrance to community participation in rural health development project which are mainly lack of funds, lack of cooperation, community clash and ignorance with lack of funds been the most predominant option shares by majority of the respondents. And the way of improving community participation in rural health development as revealed by this study is through educating the people on the relevance and need of community participation and cooperation. According to the test of hypothesis carried out, the result shows that (table 4.3.1), that there is a statistically significant relationship between community participation and rural health services in the study area.

Conclusion

This study undoubtedly has been able to scientifically add more thought on the relevance and importance of community participation in enhancing rural health

development. While there is some evidence to establish the benefits of community participation in producing health and health related outcomes, only a few good quality higher level studies have been conducted. Few, if any, studies have definitively demonstrated that community participation provides better health outcomes than no community participation in the same circumstances. However, further attention to the analysis and reporting of the community participation aspect of primary health care and public health interventions is warranted, as absence of evidence of an effect is not the same as absence of an effect. Thus in light of this, I will stress the value of genuine community-health sector partnerships to develop health services for rural communities. Using a developmental approach will enable communities to work in partnership with health systems to employ resources to the health issues that are of most concern to communities. However, governments, health practitioners, and health systems must recognize and accept that community health development requires a long-term and consistent investment, with health system reform processes and restructures managed so that they do not impact negatively on the processes. If this can be achieved then improved community health can be expected.

Also the study literatures also highlighting the paradigm shift approach that involve to a bottom-up approach to community development is strongly being adhered to in the study area. This indicates that there is need to strengthen the concept and practice of community participation in rural development projects and sensitize rural dwellers to key into it. This study therefore compliments earlier study by Stohr and Taylor, (1981) that appreciate rural people as major stakeholder in their own development since the previous top-down approach has failed in achieving many of its goals due to several bottlenecks.

Recommendations

The provision of functional infrastructural facilities and services has great impact on the growth and socio – economic development of the rural health community. Thus, this work puts forward the following recommendations for all stakeholders in rural development:

1. Consultation with the rural dwellers, sensitizing and creating of awareness should be duly carried out because collective effort is what provision and execution of a successful rural health development project requires.
2. It was discovered that the spirit of communalism previously associated with rural areas has been dwindled in the studied area, giving way for greed and mutual suspicion which hinder collective participation in projects. To address this,

traditional authorities should be re-engineered to seeing themselves as the father of all community hence fostering the spirit of self-help, selflessness and service to humanity in their respective domains.

3. Lastly, women should be allowed to be actively and deliberately involved in community participation. This is because women participation in development is a current global best practice, and the study area cannot be an exception. In this light, non-governmental organization focusing on women should be organized to channel women empowerment and participation.

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A DESCRIPTIVE SURVEY ON THE FUNCTIONALITIES OF THE WARD HEALTH SYSTEM IN Amai AND OBIARAKU WARDS IN UKWUANI LOCAL GOVERNMENT AREA, DELTA STATE, NIGERIA

Imasogie-osa Temple Wonderful

\College of Health Sciences
Novena University, Ogume, Delta State,
Nigeria

In collaboration with:

Health Research Institute

Nic Maurice Colleges of Health, Management, Sciences & Technology,
Amamong, P.M.B 1006 Okobo, Okobo Local Government Area, Akwa Ibom State.

ABSTRACT

The Federal Government of Nigeria revitalized the National Primary Health Care Development Agency and introduced the ward health service system in the year 2000 in response to the World Health Organization recommendation that “community mobilization would be greatly assisted when the boundaries of the health district are the same as the electoral ward which elects a councilor to the local government area”. The Ward Health System (WHS) represents the current national strategic thrust for the delivery of PHC services and utilizes the electoral ward (IS the basic operational unit for PHC service delivery. All the previous attempts to strengthen the primary health care in Nigeria had failed before this current intervention which is still ongoing; there are some major reasons that the system is still not well established. Thus this study identifies the functionalities of the ward health system in two wards in Ukwuani Local Government Area, Delta State. The objective of this study is to determine and document the gaps standing in the knowledge of the ward health system. A self-administered semi-structured questionnaire was administered to a total of 160 respondents including the members of the ward development committee and the members of the village development committee from Amai ward I and Ward II respectively. Also series of interview and available records was used for the collection of data. Data collected were analyzed through descriptive processes. The study shows that the concept of the ward health system is not fully recognized in the wards, the existing position of the system is considered none and void as even some members of the committee still try to undergo some health activities, same is not done under the systems umbrella. Also the study further shows that there is inactive presence of the committee due to lack of concern of the government and the health progress of the community depends on the primary health centers in the wards. In conclusion, the level of functionality of the ward health system is not only very low but depreciating in the two wards of the local government.



Introduction

In order to revitalize the nation's primary health care [PHC] system, the national primary health care development agency [NPHCDA] instituted the ward health system ; a system of health services with the goal of improving and ensuring sustainable health service with full and active participation of people at the grassroots level. Several attempts were made to provide effective and efficient health services with wide coverage in Nigeria in the past. The basic health services scheme (BHSS) was the first attempt in the (1975-1980) development of new cadres of community health workers such as the community health assistant (CHA), community health supervisors (CHS), community health officer (CHO) and the community health aide (CHA); they were later streamlined to community health officer (CHO), community health extension workers (CHEW) and Junior community health extension workers (JCHEW). (NPHCDA, 2006)

and supported by mobile clinics serving an approximate population of 150,000 each (Dungy, 1979, Adeyomo, 2005). This system however had its shortfall such as not involving the community participation among others; hence the system could not meet its goals. Fifty two (52) pilot local government areas were chosen in 1986 to be developed as model PHC centers, many activities were conducted during this period such as baseline data survey, project formulation, situational analysis, plan implementation workshops. Bamako initiative was introduced in 1988 as a strategy for strengthening the primary health service (PHS) system in these same 52 local government areas. In some local government areas, resources, drug revolving fund and guidelines for managerial infrastructure were provided with good results. The desired objectives of these attempts were generally not still achieved despite all these effort because the people were passive recipients with limited power in most places. Another drawback of this attempt was the non-involvement of local communities who were the beneficiaries of the services. This led to the inability to sustain the Scheme at the close of the third national development plan period, (Aigbiremolen, A.O. et al. 2014) . The world health organization (WHO) review team in 1992 created the National

The Basic Health Services Scheme came into being in 1975 as an integral part of Nigeria's Third National Development Plan (1975 – 79) and was structured along “basic health units” which consisted of 20 health clinics spread across each LGA, which were backed-up by four (4) primary health care centres

Primary Health Care Development Agency. The second attempt which was led by late Professor Olukoye Ransome-Kuti occurred between 1986 and 1992 (Kuti et al, 1991). This period was characterized by the development of the model primary health care in the 52 pilot local government areas all of which were implementing all eight components of primary health care. The second attempt (1986 – 92) propagated the modified prototype and assisted communities to form Village or Community Development Committees (VDCs or CDCs) in rural and urban areas respectively. The main problem again was that the communities saw the projects as government owned properties and paid little or no attention to their sustenance.

Unfortunately, there was serious deterioration in the nation's health system and central role of the PHC between 1993-1999 due to instability in governance, poor funding, lack of political will and others. Therefore, the NPHCDA was mandated to revitalize the nations PHC system. In 2000, the ward health system was adopted by the NPHCDA which is the third attempt to revitalize the health system and replace the district and village structures. The ward health system which is the 3rd attempt and the most recent model created to revitalize the PHC system represents the current national strategic trust for the delivery of PHC services and utilizes the electoral ward as the basic operational unit for PHC service delivery. The federal government provides fund each year to build model (ward health center). 200 centers were built in 2001, 120 and 61 in 2004 and 2005 respectively nationwide. The new model PHC centre is "to serve as apex health facility and referral centre within each ward". This center's are managed by their respective communities and emphasized community based service. The communities are involved actively right from the construction stage of ward health centers and handed over finally to their ward development committees (WDC) to ensure co-management of services and ownership. The goal of ward health system is to improve and ensure sustainable health services with full and active participation of people at grass root level. Therefore this study aim at assessing the functionality of this ward health system to knowing the level of achievement of the stated goal of the programme.

Statement of Problem

The Nigerian health care system has suffered several down-falls despite the strategic position Nigeria plays in Africa, the health care sphere is greatly underserved in the country, and Health facilities (health centers, personnel and medical equipments) are inadequate especially in rural areas, While various reforms have been put forward to address wide ranging issues by the Nigerian government. In the

health care system, they are yet to be implemented at the state and local government area levels. According to the 2009 communiqué of the Nigerian national health conference[as cited in Am. J. Soc. Mgmt. Sci.,2012], the health care system remains weak as evidenced by lack of co-ordination, fragmentation of services, dearth of resources, inadequate and decaying infrastructure, inequity in resource distribution and access to care and very deplorable quality of care. The communiqué further outlined the lack of clarity of roles and responsibilities among the different levels of government to have compounded the situation.

The Nigerian health care system is poorly developed and has suffered several backdrops, standards must therefore be set in order to effectively manage health services and achieve good quality of care. Several attempts have been made to set these standards for PHC system in Nigeria from the basic health service scheme to the current ward health system, The ward health system making it the current strategy for improvement in PHC services, years after the introduction of the operation, it was seen that stakeholders are not as knowledgeable as expected, no inclusion of training on WHS in the medical and dental curricula as to prepare them appropriately for PHC services, as well as inefficient health programme management. It was expected that there would be improvement in the PHC implementation arising from the introduction of the ward health system. This research therefore intends to look into the ward health system potential failures as well as critically analyze its implementation and challenges thereby offering suggestions towards greater efficiency and effectiveness.

Justification

The ward health system is the smallest unit of the health care services in Nigeria and it is most expected to be the most functional unit being the most accessible at grass root level. From general assessment, Ward Health System is not actually functioning in accordance with the PHC concept. Three years after the inauguration of the ward health system (2000 to 2003), reports from model wards to the NPHCDA indicated that implementers were still not clear about the process and some communities had not formed the ward development committees. Nine years after, the same problem is still on ground and it was expected that all the primary health care providers would have been well informed about the ward health system. Gaps in the knowledge need to be identified and addressed. Areas of ward health system not being well established have to be visible; thus this study.

Significance of the study

- Ø It is conceived that the research study will provide basis for improving ward health system in primary health care delivery services at local government level.
- Ø The lecturers of Public and Community Health will find the research to be of immense use.
- Ø Students of Public and Community Health will find the study a good companion when involved in clinical experience and community diagnose processes within the grass root level.
- Ø Very importantly the research work will serve as a source of information to students, writers and researchers who may wish to carry out further research.

Objectives of the study

The overall objective of the study is to assess the functionalities of ward health system in two wards in Ukwani local government area in delta state, Nigeria.

Specific Objectives

1. To assess the concept of ward health services and its attributes.
2. To elaborate the existing position of ward health system in the wards.
3. To identify the gaps in the knowledge and implementation of the ward health system in these wards.
4. To evaluate how the ward health programme structure works within the two wards.

Research Questions

1. What is the concept of the ward health services and its attributes?
2. To what extent is the existing position of the ward health system in the wards?
3. What are the gaps in the knowledge and implementation of the ward health system in these wards?
4. How does the ward health programme structure works within the two wards?

Scope of the study

The Scope of the activities covers the functionalities of the ward health system in two wards in Ukwani local government area which is Amai and Obiaruku ward respectively in delta state. It provides an assessment of the level of the ward health system in health care services. It also projects the prospects of ward health in primary health care. The study is delimited to local government area.

Null Hypothesis

- There will be no significant relationship between the concept and the knowledge of ward health system

- There will be no significant relationship between the concept and existing position of the ward health system.

Literature Review

In Nigeria, primary health care was adopted in the National Health Policy as the cornerstone of the Nigerian health system as part of efforts to improve equity in access and utilization of basic health services. Since then, primary health care in Nigeria has evolved through various stages of development (FMOH, 2004).

Primary Health Care (PHC) is the cornerstone of the health policy in Nigeria and is the first point of contact for most Nigerians seeking health services in the health care system. Standards must therefore be set in order to effectively manage health services and achieve good quality of care. The purpose of setting health standards according to the World Health Organization is to serve as a tool in health services management; and to strive towards achieving the highest possible quality of care within the resources available. Attempts have been made to set standards for PHC in Nigeria from the Basic Health Service Scheme of 1975 – 1980 to the current Ward Health System. (NPHCDA, MSPHCN page 13).

Description of a ward

The ward is the smallest political structure consisting of a geographical area with a population range of 10,000 to 30,000 people. There are on the average, ten wards per local government, each represented by an elected councilor. Structurally, each ward has a ward development committee composed of a ward head as patron, an elected chairman, secretary, chairmen of village/ community development committees, headmaster of schools, community development officer, representatives of occupational groups and at least there must be a female member.

The ward health system

The Ward Health System, which takes on the political Ward as the functional unit for PHC service delivery, was adopted as a suitable strategy for addressing the numerous challenges and accelerating progress in the attainment of Millennium Development Goals. Based on the findings of the 2001 NPHCDA Needs Assessment, the country introduced the Ward Health System as the functional unit for PHC service delivery. The WHS aligns the delivery of health care with the political wards, and demonstrates in concrete terms the desire of the national government to establish a people oriented and focused PHC system, which is community driven and co-managed by the health staff and community members. The homogeneity of the ward and the ability to generate grass root political commitment and support has proven far

more beneficial than the former District Health System, which was based on vague boundaries created by the LGA health departments. (Gavi alliance HSS, 2007).

In the past, Nigeria like many other developing countries, especially in sub-Saharan Africa also operated the District Health System but later, there was no clear demarcation of the "district", as all LGAs carved themselves into what they perceived as districts. The entire LGA was considered then as the functional unit and there was no uniformity. Therefore, in response to WHO recommendation of 1992 that "community mobilization would greatly be assisted if the boundaries of the health district are the same as the electoral ward (10,000 to 30,000 people) which elects a councilor to the LGA". The Federal Government of Nigeria re-vitalized the National Primary Health Care Development Agency (NPHCDA) and introduced the Ward Health System, So instead of the "LGA-District/Village" structure, the "LGA-Ward-Community/Village" structure was adopted in December, 2000. That year, the Federal Ministry of Health (FMOH) provided the resources to build 200 model Ward Health Centers to be sited in wards that had no health facility in the 6 health zones of the country, this was an opportunity to develop a health system in the ward around the health centers. This was also the next attempt by the nation to build standard national health centers throughout the country as part of the development of its PHC services.

The Government identified PHC as the only panacea for health problems in Nigeria, Based on this, the President of the then democratic era, in the 2001 Appropriation Bill, mandated the NPHCDA to facilitate the construction of 200 health centers across the country which will be the fulcrum for the implementation of PHC. By the end of the Year 2003, a model health centre had been constructed in each of the initial 200 target wards to serve as the apex of all PHC services in the ward. These health centers were to be managed by their respective communities and the emphasis was on community-based services. The communities were to be actively involved right from the construction stage of the health centers, and the services handed over to their Ward Development Committees (WDC) for supervision. This was a major departure from previous practice and a giant step towards community ownership. Five years after the commencement of activities for the third attempt, apart from the commissioning of model facilities, service utilization, communities' response and participation were still below expectation. Some facilities were locked up after commissioning and non-staffing of community Health Posts by Junior Community Health Extension Workers (JCHEWs)

remained a major constraint. Several JCHEWs had been trained but they were not employed by their LGAs. Village Health Workers (VHWs) and Traditional Birth Attendants (TBAs) who were trained during the first two attempts had either died or abandoned their community-based activities. Abandoning of community functions has been attributed to long periods of no supervision resulting from real financial constraints or the culture of "inadequate funds" of those that had been accustomed to previous years of abundant funding. Two of the 375 wards in Lagos State were among the first set of the national 200 models. Seven years after WHS operation in Lagos State, it was expected that all the primary health care providers would have been well informed about the WHS (Abosede et al., J Community Med Health Educ, 2012).

Aims and objectives of ward health system

1. To improve access to quality health care and ensure equity.
2. To promote full and active community participation at the grass root level in order to sustain an effective delivery of PHC service in the ward.
3. To promote local initiatives and encourage poverty alleviation activities in the ward.
4. To re-enforce political commitment to PHC at the grass root level
5. To reduce morbidity and mortality especially amongst women of child bearing age and children under five years

Integrated health services provided by the ward health system

Services provided are;

Maternal/child health family planning, Nutrition and growth monitoring, Immunization, Environmental sanitation and water supply, Health education, Treatment of common problems.

Programme structure of the ward health system

The ward health services provide PHC services to a political ward or constituency. It has a referred ward health centre (WHC) which provides integrated services to cover all PHC components. The WHC staff coordinates and supervises all the health services within the ward. Each ward is sub-divided into 6 health areas comprising of groups of villages and each health areas has static health facilities (SHF) which is made of health clinic, post, dispensaries, maternity and outreach clinics, all these were linked to the WHC or PHC and are supervised by a resident (chew) [NPHCDA, 2006].

Ward health service manpower

- The manpower requirement of the WHS is made of
- (a) Facility health team comprising of 1 community health officer normally in-charge 2 midwives, 4 community health extension workers (CHEW), 1 laboratory technician and a medical officer if the latter two are unavailable
 - (b) Community based providers: this comprises of 6 junior community health extension worker (JCHEW), village health workers (VHW) and traditional birth attendants (TBAs)

Management structure of the ward health system

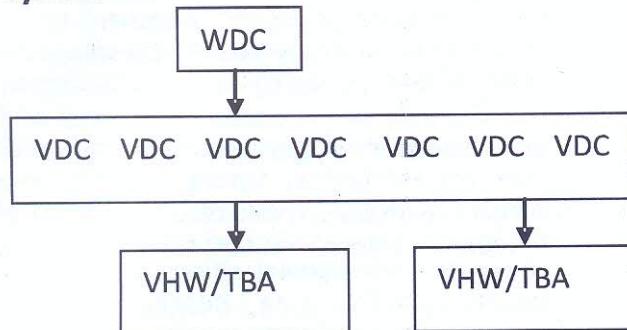


Fig.1. Organogram of the ward health system

The management structure of the ward health system is mainly community-based. It consists of ward development committee (WDC) at the ward level, and the village development committee (VDC) at the village levels respectively. The WDC consist of the chairman of VDC in the ward which serves as the supreme body for the function of the ward health Centre and other development activities carried out in the ward. It has direct link with the local government managerial committees through a representative (NPHCDA, 2006). (GAVI Alliance HSS applications, 2007) explains that the WDCs represent the closest administrative link between health facility services and the communities. In addition, the roles of the WDCs is very critical in direct mobilization of local community resources, health promotion, increasing demand for services necessary for enhancing access by families, households and the communities. The involvement of community gatekeepers in direct management of community-based services will contribute to sustainability of the primary health care interventions.

Functions of Ward Development Committee (WDC)

The functions of the WDC includes;

1. Mobilizes and motivates active participation of the people
2. Identifies health and social needs of the ward and plans for their solution
3. Mobilizes local resources (human & material) to

meet the health needs of communities

4. Support and monitor the implementation of work plans
5. Forward all health development plans to the local government
6. Provides feedback regularly to communities
7. Serves as the linkage between communities and government
8. Maintain the ward health centers.

Operational guidelines of WDC/VDC

This includes:

- Committees meet regularly as decided by members,
- The committees comply with the quorum set for meetings,
- Minute of all meetings are recorded,
- Committees operate a bank account whose signatories are the chairman and treasurer, Treasurer keeps all records of funds received and expenditure, Money is spent only on the directives of the committees.(NPHCDA, 2006).

Management Process for the Development of Primary Health Care System

Primary health care emphasizes the important of full participation by all communities for the programme to succeed in accordance with the Alma Ata declaration of 1978. Prior to that time, decisions and actions relating to health were unilaterally taken by government agencies on behalf of the communities.

Nigeria, being a signatory to that declaration, has made relentless effort to involve full community participation in matters relating to health. However, full community involvement/participation cannot happen by accident. It requires people and condition to bring it about. This will require a well institutionalized managerial process put in place as a framework for action.

The managerial process refers to the organization and management of infrastructures that have to exist at various levels (villages, districts, LGAs etc.) for primary health care implementation. To some extent, some of these infrastructures are already in existence in one form or the other nevertheless there will be need to adapt some of them to meet the current concept of PHC. In order to affect this managerial process, the bottom up concept of planning from the village to the federal levels must be applied.

Managerial Processes for each Ward Health Operational Level

The managerial processes of the ward health system are described to be composed of the following: The village development committee, the ward development committee, and the health facilities development committee

(i) Village Development Committee

Composition/ roles and responsibilities

The committee is composed of a Village head or other respectable person appointed by committee members as chairman, Primary school headmaster shall be the committees' secretary, In the absence of whom a literate member shall serve, Representative of religious group, Representative of women's group/ associations, Representative of NGOs, All VHW / TBAs, Representative of youth group / association / age grades, Representative of traditional healers and patent medicine dealers. A very trusted member of the committee will serve as treasurer.

The committee shall:

Identify health and health related needs in the village / community. Plan for the health and welfare of the community, Identify available resources (human and material) within the community and allocate as appropriate to programmes (PHC, onchocerciasis, AIDS / STD, guinea worm, malarial etc.), Supervise the implementation of work plans (PHC, STD / AIDS, malaria, leprosy /TB. Etc.), Monitor and evaluate the progress and impacts of the implementation of health activities including AIDS / STD, leprosy / tuberculosis, Guinea worm, malaria, etc.), Select appropriate persons within the community to be trained as village health workers (VHWs) for PHC, AIDS / STD and other programmes, Select appropriate traditional birth attendants for training, Supervise the activities of the village health workers and traditional birth attendant; including review of monthly record of work, Remunerate, in cash or kind, the village health/ worker for his work in the community, Agreed with the village health workers the number of hours he/she should work per day, Establish a village health post, where there is none already, Liaise with other officials living in the village to provide health care and other development activities, Provide necessary support to VHW for the provision of health care service, Forward local health community plan to district level.

Operational guidelines

In following the above terms of reference the committee shall : Meet the least once every month, Record minutes of meetings, Minutes of meetings shall be signed by the chairman and secretary after adaptation at subsequent meetings, Comply with the quorum set for starting meetings, The treasurer should record and keep all moneys, The treasurer should record all expenditures, Where there is a bank account, signatories will be committee chairman, treasurer, or secretary, Send minutes of meeting

to district development committee.

(ii) Ward Development Committee

At the ward level, a PHC committee will be set up. Where a ward development committee already exists, PHC, AIDS / STD, leprosy / TB and such other programs will be added to the work of such a committee.

Composition of the Committee/Roles and Responsibilities

The ward development committee shall consist of the following member:

Ward councilor as chairman, The most senior traditional ruler as patron; but where no such person exists, the most respectable village head or any other so person so appointed may serve as committee patron, The ward health team leader as secretary, All villager head within the ward or their representatives, Secondary and primary school headmaster, The most senior agricultural extension worker in the ward, The ward community development officer, Head of health facilities in the area, Representatives of occupational/professional group, Representatives of VHWs /TBAs, Representatives of international organizations and NGOs in the district, Representatives of religious groups, Chairman of traditional healers' / patent medicine healers.

The ward committee shall:

Identify health and social needs and plans for them, Supervise the implementation of development work plans, Identify local human and material resources to meet these needs, Forward all health / community development plans (village, facility and ward levels) to LGA, Mobilize and stimulate active participants of prominent and other local people in the planning, implantation, and evaluation of health projects; (PHC, AIDS / STD, TB / leprosy etc, Raise funds for community programmes when necessary at village, facilities and district levels, Establish a village head post, where one does not exist already, Provide feedback to the rest of the community on how funds raised were distributed, Liaise with government and other voluntary agencies in finding solution to health, social and other related problems in the ward, Supervise the activities of the VHWs / TBA, CHEWS, Monitor activities at both the health facilities and village levels, Oversees the functioning of the health facilities in the ward, Provide necessary support to VHW / TBAs.

Operational guidelines

The committee shall: Meet at least monthly,

Record minutes of meetings, Recommend that minutes of meeting be signed by the chairman and secretary after approval at the next meeting, Monitor drug revolving at the ward / facilities level, Ensure that M & E form are correctly filled and submitted in time, Give feedback to date collected at LGA PHC managerial development committee, Comply with the number of members set for starting the meeting, Authorized the treasure to record and keep all moneys, Authorized the treasure to spend money only after approval by committee, Instruct the treasure to record all expenditure, Choose where applicable, the ward referral center to serve as the meeting venue and secretary of the ward development committee, Advise, where there is a bank account; signatories to be the committee chairman, secretary or treasurer, Send meetings of meeting to local government area committee.

(iii) Health Facilities Development Committee (In Certain Special Circumstances)

At certain health facility, a "health facility development committee" should be set up in committee lacking the political will to mobilize (or constitute) on district development committee for the purpose of enhancing the development of either village / district level health facility (clinic or centers) that are isolated from direct committee participation in their management. The composition, terms of reference and operations guidelines are as follows:

Composition / roles and responsibilities

The committee should consist of the Respected person appointed by the committee as the chairman, Primary / secondary school principal / headmaster, Representative of religious groups, Representative of woman's group, Representative of age grades, youth associations, Representative of occupational / professional groups, Representative of NGOs, Representative of staff of the facility; and Any other as may be deemed fit for membership. A trusted member of the committee will serve as treasure. A literate member of the committee will serve as the secretary

The committee shall:

Plan for health and welfare of the community including AIDS / STD / prevention, supervise the implementation of health plans, Set achievable local health targets, Identify available resources (human and material) within the community, Monitor and evaluate the impact of the services on the health status of the community; including HIV / AIDS / STD prevention (sterilization), use of gloves for routine clinic procedures, supply of

condom), Supervise the activities of the village health workers, traditional birth attendants, community health workers, Establish a village health post, Liaise with other officials living in the village to provide health care and other development activities, Provide necessary support to VHW, Forward facility health plan to district level

Roles in the Ward Health System

The State, the local government, the ward and the committee members has pivotal roles in the ward health system as outlined herein.

(I) The role of the local government on the ward health system

These include:

- To provide appropriate health manpower to the health centre.
- To provide basic amenities such as water, light and others.
- Provide funding and material support like vaccine, drugs, equipments and others.
- To provide technical support in capacity building like training of health workers and community members.
- To supervise, monitor and evaluate health activities in the ward, Provide kit for TBA/VHA.

(ii) The role of the state government to the ward health system

These include:

- Support local government area through the local government service commission in the provision of appropriate health manpower in the ward health centre.
- Provide technical assistance to local government area in the implementation of WHS,
- Supervise the local government areas PHC program through the various state programme managers.
- Provide funding and material support, Strengthen referral linkage between primary/secondary levels of health system.
- Provide all necessary support to school of health technology and other PHC training institution.
- Supervise, monitor and evaluate the implementation of PHC in local government areas.

The Ward Minimum Health Care Package

The introduction of the Ward Health System was a culmination of efforts to provide an appropriate infrastructural resource for support and co-management of viable community- based integrated PHC services

through the provision of a minimum package of equipment, drugs and other supplies for PHC. This system requires smaller subgroups of health facilities to cater for areas that are far from the ward health centre but within the same ward. The Ward Minimum Health Care Package was developed within the context of the Ward Health System and aligned with the millennium development goal (MDG) targets of Nigeria. The Ward Minimum Health Care Package (WMHCP) was developed to address this current strategy to deliver PHC services, and consists of a set of health interventions and services that address health and health related problems that would result in substantial health gains at low cost to government and its partners. The Ward Minimum Health Care Package which outlines a set of cost effective health interventions with significant impact on morbidity and mortality was also developed. The package took into cognizance the nation's burden of disease, current trends in disease prevalence and priority diseases of national importance. In recognition of overriding importance of key support services and resources, some strategies for the provision and sustenance of the 6 interventions were outlined in the WMHCP and form the basis around which this Minimum Standards document was developed; Service Provision including Essential Drugs, Human Resource for Health, Health Infrastructure development

Within the Plan of Action (2007-2012), the Ward Minimum Health Care Package 1 will implement the following health interventions:

- (a) Control of communicable diseases (Malaria, TB, STI/HIV/AIDS)
- (b) Child Survival
- (c) Maternal and newborn care
- (d) Nutrition
- (e) Non communicable Disease Prevention
- (f) Health Education and Community Mobilization

Meanwhile, functional health infrastructure, human and financial resources would be provided to support health service delivery at the ward level.

Research Methodology

Introduction

The methodology used to conduct this research study on level of functionality of the ward health system in Ukwuani local government area is discussed in this chapter. This chapter covers the study design, study area, study population and sample, sampling technique, method of data collection and instrument used, method used in analysis of data, validity and reliability of the instrument.

Study design

The Descriptive survey research is utilized in this

study. It is a non-experimental research that is used to collect data on phenomena that cannot be directly observed. This survey determines and report the way things are, explaining the condition as they occur naturally through the use of questionnaire, interview to elicit responses on the issues that are involved in order to achieve the objective of this research.

Study area

The study area is Amai ward 6 and Obiaruku ward 1. Both wards are located in Ukwuani Local Government Area which was carved out of the then Ndokwa West Local Government Area on the 4th of December, 1996 and has an area of 2,016 square kilometers in Delta state. Nine clans make up the local government area namely; Akoku, Amai, Ebiedei, Eziokipor, Ezionum, Obiaruku, Umuebu, Umukwata and Umutu, with Obiaruku as the headquarters of the local government. Together they make up the ten wards of the local government area. The people are a mono linguistic group, the Ukwuanis (an Igbo dialect). (LGA data, 2015)

Study population

Population of the study refers to any set of persons or objects that possesses at least one common characteristic. The population of the local government is about 103,000 going by the 1991 census. The population of people in Amai is about 15,783, the population of Obiaruku is about 22,973. The survey was conducted in Amai and Obiaruku ward respectively. The target population of the study are the ward development committee members and village development committee member within the study area which will consist of about 160 members which is the total sample size .

Inclusion criteria

All the ward development committee members and village development committee members were included in the study.

Exclusion criteria

All persons that are not members of the both committees were excluded from the study.

Sampling technique

The technique adopted is the purposive sampling technique which was used in obtaining the sample size. According to Ethiopia public health training initiative; this method is used when focusing on a limited number of informants, whom is selected strategically so that their in-depth information will give optimal insight into an issue about which little is known.

Method and instrument for data collection

The instruments for data collection are questionnaire,

interview methods and available records, the questionnaire will be of both open-ended and closed-ended form divided into 4 sections, the main items on the questionnaire and interview covered the socio-demographic data of respondents, the existing position of the ward health system, the concept of ward health services and its attributes, how the ward health programme structure works within the wards, identifying the gaps in knowledge and implementation of ward health system in these wards, the content of the research questions were used during the interview. The data was retrieved after responses for analysis.

Validity and reliability

To determine the validity of the instrument, the questionnaire was subjected for scrutiny by the researcher's project supervisor. In this regard, the instruments was assessed and approved for content and face-validity. The instruments for data collection was validated for its reliability by the project supervisor and two other lecturers in the department of public and community health, Ogume. The project supervisor checked for appropriate responses of the study.

Method for data analysis

The various responses will be analyzed using descriptive analytic approach which includes the use of tables, simple percentages and explanation building.

Limitations of the study

The limitations of this study includes

- The collection and availability of data.
- Scarcity of reference materials.
- lack of trust on the part of the subject

Data Analysis and Presentation of Results

This research is basically descriptive design therefore the information and data are analyzed by descriptive processes. This chapter considers the analyses of responses obtained from the interview schedule and the questionnaire that were distributed to the various respondents in the both wards.

Data Presentation

The demographic variables and responses given by the respondents and available records will be interpreted using tables, simple percentages and descriptive processes.

Section A

Socio-demographic data

Regarding the age range of the respondents using available records, 142(88.75%) of the committees' members range from 38-47 years of age and above while 18(11.25%) ranges from between 28 -37 years

of age. Regarding educational background, 122(76.25%) have tertiary education, 22(13.75%) have secondary education, 16(10%) have other educational background in respective of their occupational groups like technical. Regarding occupation, 127(79%) are civil servants, 17(11%) are self employed, 16(10%) are retired. Regarding indigeneship, it shows that majority of the committee members are indigenes of the ward/local government area.

Table 1: Demographic characteristics of respondents

Age	Frequency	Percentage
18-27 years	—	—
28-37 years	18	11.25
38 -47 years and above	142	88.75
Total	160	100

Section B

This section deals with the introduction of the committee

Table 2: Name of ward

Responses	Frequency	Percentage
Amai	12	60
Obiaruku	8	40
Total	20	100

Table 2 above shows that 12(60%) of respondents are members of Amai ward and 8(40%) of the respondents are members of Obiaruku ward.

Table 3: Name of committee

Responses	Frequency	Percentage
WDC	10	50
VDC	7	35
No committee	3	15
Total	20	100

Table 3 above shows that 10(50%) of respondents indicated that they are members of the WDC, 7(35%) indicated that they are members of the VDC, 3(15%) indicated that they do not belong and have any knowledge of any committees existence.

Table 4: Committee operational since

Responses	Frequency	Percentage
2001	10	50
Do not remember	7	35
No response	3	15
Total	20	100

Table 4 above shows that 10(50%) of respondents indicated that the committee has been in operation since 2001, 7(35%) indicated that they do not remember when the committee became operational, 3(15%) had no response to this question.

Table 5: Frequency of meetings

Responses	Frequency	Percentage
Monthly	10	50
No meetings	8	40
No response	2	10
Total	20	100

Table 5 above shows that 10(50%) of respondents indicated that the committee do have meetings monthly, 8(40%) indicated that there has been no meeting organized for a long time, 2(10%) had no response to the question

Table 6: Overall role and function

Responses	Frequency	Percentage
Immunization and public enlightenment	8	40
See to health activities	5	25
No response	7	35
Total	20	100

Table 6 above shows that 8(40%) of respondents indicated that their role in the committee is immunization and public enlightenment, 5(25%) indicated their role as seeing to health activities in the wards, 7(35%) had no response to the question. The traditional leaders, community leaders, any required persons are involved in this roles.

Table 7: Reporting arrangement

Response	Frequency	Percentage
Local government	10	50
WHO	9	45
To the palace	1	5
Total	20	100

Table 7 above shows that 10(50%) of respondents indicated that they report to the local government, 9(45%) indicated that they report to the world health organization (WHO), 1(5%) indicated that they report to the palace

Table 8: How functional has the committee been?

Response	Frequency	Percentage
Not functional	9	45
No response	11	55
Total	20	100

Table 8 shows that 11(55%) had no response to the question, 9(45%) of respondents indicated that the committee is not functional.

Table 9: Has it been active?

Response	Frequency	Percentage
Yes	9	45
No	11	55
Total	20	100

Table 9 above shows that 11(55%) of the respondents indicated that the committee has not been active, 9(45%) indicated that the committee has been active.

Additional comments; women leaders and market women association are also available to the committee, minutes of meetings are always documented, the local government is not concerned about the welfare of committee members.

Section C

No respondent indicated any standing intervention programme of the committee.

Table 10: Does the committee often go out for monitoring of the activities at both the health facilities and village levels?

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 10 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no. All respondents stated that there is no fund raising planned for community programmes and also stated that no feedback is provided. All respondents indicated yes to the presence of a monitoring team for drug revolving at ward level. All respondents stated that there was no health post established by the committee

Table 11: Does the committee supervise the implementation of any developing work plan to be done in the ward?

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 11 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no.

Table 12: Does the committee regularly oversees the functioning of the health facilities in the ward

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 12 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no.

Table 13: Is there mobilization and active participation of prominent and other people in the planning, implementation and evaluation of health projects?

Response	Frequency	Percentage
Yes	18	80
No	2	20
Total	20	100

Table 13 above shows that 18(80%) of respondents indicated yes, 2(20%) indicated no.

Table 14: Does the committee liaise with government and other agencies in finding solutions to related problems in the ward?

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 14 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no.

Table 15: Does the ward development committee forward all health/community development plans to the local government area

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 15 above shows that 12(60%) of respondents indicated yes, 8(40 %) indicated no.

Table 16: Is there any existing plan for the welfare and health of the community?

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 16 above shows that all respondents 20(100%) indicated no.

Table 17: Are available resources within the community identified and allocated to appropriate programmes in the ward

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 17 above shows that all respondents 20(100%) indicated no.

Table 18: Does the committee select appropriate persons within the community to be trained as village health workers and traditional birth attendants for primary health care

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 18 above shows that all respondents 20(100%) indicated no.

Table 19: Are the activities of the village health workers and traditional birth attendants supervised especially the review of work record

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 19 above shows that all respondents 20(100%) indicated no.

Table 20: Are support provided to the health workers and traditional birth attendants for provision of health services

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 20 above shows that all respondents 20(100%) indicated no.

Table 21: Does the committee liaise with other officials living in the village to provide health care and other development activities?

Response	Frequency	Percentage
Yes	18	80
No	2	20
Total	20	100

Table 21 above shows that 18(80%) of respondents indicated yes, 2(20%) indicated no.

Table 22: Does the village development committee forward local health community plan to district level

Response	Frequency	Percentage
Yes	3	15
No	17	85
Total	20	100

Table 22 above shows that 17(85%) of respondents indicated no, 3(15%) indicated yes.

Table 23: Is there an existing bank account of the committee?

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 23 above shows that all respondents 20(100%) indicated no.

Table 24: Are all expenditures recorded?

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 24 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no.

Table 25: Is there a ward referral centre used by the committee

Response	Frequency	Percentage
Yes	12	60
No	8	40
Total	20	100

Table 25 above shows that 12(60%) of respondents indicated yes, 8(40%) indicated no.

Table 26: Are feedbacks of data collected given at local government area primary health care managerial development committee meetings?

Response	Frequency	Percentage
Yes	10	50
No	10	50
Total	20	100

Table 26 above shows that 10(50%) of respondents indicated yes, 10(50%) indicated no.

Table 27: Is there a health facility development committee in the ward?

Response	Frequency	Percentage
Yes	5	25
No	15	75
Total	20	100

Table 27 shows that 5(25%) of respondents indicated yes, 15(75%) indicated no.

Table 28: When was the ward health system fully implemented in this ward

Response	Frequency	Percentage
2001	10	50
was never	8	40
No response	2	10
Total	20	100

Table 28 above shows that 10(50%) of respondents indicated that implementation took place in 2001, 8(40%) indicated that implementation never took place, 2(10%) had no response to the question.

Table 29: Has the goal of the ward health system been achieved in this ward

Response	Frequency	Percentage
Yes	-	-
No	20	100
Total	20	100

Table 29 above states that all respondents 20(100%) indicated no to the goal of the ward health system being achieved in the ward.

Section D:

What are the types of health facilities present in the ward?

According to responses given, the type of health facilities present in Obiaruku ward includes two primary health care centers, one general hospital, while the type of health facilities present in Amai includes one primary health care center.

Who manages these facilities?

These facilities are managed by their various management structure such as PHC coordinators, health workers, CHEWs, midwives, nurses, doctors, health attendants.

Are the facilities well equipped?

Responses also show that the health facilities are not adequately equipped for the full effectiveness of health care services.

Are these types of PHC services provided in the ward?

All respondents responded yes to all the stated services.

Data Presentation Based on Research Questions

Research question one: What is the concept of the ward health services and its attributes?

The response given by the interviewee's shows that the ward health system is relatively not recognized in the wards. The interviewees in Amai ward responded that the concept of ward health system was not clearly established the way it is suppose to function and is not perceived as such . The interviewees in Obiaruku ward had some few ideas about the ward health system but understanding about its concept was not pronounced. The value of ward health system in the wards is stated as outdated and inefficient.

Research question two: To what extent is the existing position of the ward health system in the wards?

As stated by the interviewees, the ward health system has no existing position in the ward as a result of no implementation of ward health system, the position is considered none and void. There's no activities being carried out under the umbrella of the ward health system, there is no follow up or concern by the government on the ward health committee at grassroots' level which will promote community participation and knowledge. There is no active presence of the WDC or VDC therefore they had no role in the health programmes carried out in the wards.

Research question three: What are the gaps in knowledge and implementation of the ward health system? The interviewees stated that the major gap is the lack of interest shown by both the government and the implementers (both key and shallow), the interviewees also stated that the operation of the ward health system has been dormant before they came into their office. Lack of community participation at grassroot level, no in training of implementers and volunteers.

Research question four: How does the ward health programme structure works within the wards? The programme structure of the ward health is being carried out nevertheless not by the required manpower organization and structure but by the primary health care centres, since the ward health does not work, all its programmes are being achieved under the umbrella of the primary service delivery.

A total of 160 members of the ward development committee and village development committee of both Amai and Obiaruku ward were selected as samples for this study, not all the 160 subjects responded or participated because of the irregularity in the committee function and operation. A thorough analysis has been done on the data gotten for this study and answers have been applied for all the research questions posed for this study. These will enable the researcher to make the discussions, conclusion, recommendation and suggestions in the

next chapter.

Discussion, Conclusion and Recommendations

Introduction

Based on the research work, this chapter givedue regard to be the last chapter of the whole research work which focuses on discussion based on the research findings, major findings, conclusion and recommendations.

Discussions

To a reasonable extent, this study has investigated the functionalities of the ward health system in Amai and Obiaruku ward in Ukwuani local government area. Based on the study, Findings show that majority of the respondents 142 (88.75%) were in the age range of 38 years and above, the age range of 30 and above is a period in which people are becoming more conscious of the happenings in their environment. The demographic findings further revealed that majority of the respondents were literate since they had educational qualifications from secondary to tertiary level, also majority were civil servants. It was also evident that majority of the respondents were indigenes of the wards. It was evidentfrom the result that 12(60%) of the respondents were from Amai and 8(40%) were from Obiaruku and there were WDC members and VDC members from both wards.the result further revealed that 10(50%) had knowledge of when the committee was put in place, 7(35%) had no knowledge of when the committee was put in place while 3(15%) still did not have any knowledge of the committee or when it was put in place.10(50%) agreed that the committee meets monthly, 8(40%) did not agree with the fact that the committee do meet. 10(50%) stated that they report back to the local government council.

In spite of the presence of the WDC and VDC, 45% stated that the committee was not functional as not all the members do participate in their functions mainly because they were not being paid and the local government do not take concern in the activities of the committee but 9(45%) stated that the committee has been active in terms of meetings and activities even if not functioning in the expected way while 11(55%) stated that the committee has not been active at any aspect. Additional comments shows that women are available and actively present which supports that there must be a female member in the committee.

Findings further revealed that despite the presence of the committees there is unfortunately no intervention programme drafted out and carried out by the committee . Furthermore, the committee do go out for monitoring of activities at health facilities and the

village as indicated by 12(60%), the committee does not plan for any fund raising for community programmes meanwhile they have complains about having no funds to undertake programmes, this conforms to the fact that there is no existing plan for the community by the committee as indicated by the 100%. Results also shows that there was no health post established by the committee and there are limited health facilities in the wards, which can lead to community members not actively involved at activities to be implemented, these agrees with kuti(1990) and shorungbe(1991) in their assertion that health infrastructures will only have an enduring effect when built around the communities with the active involvement of community members in the spirit of self reliance and that people need to be involved formally or informally in health programmes so that they can be convinced that PHC programme is more convenient, efficacious and affordable and as good as if not better than what they already had.

The complete confirmation by 60% that the committee supervises implementation of any developing work plan to be done, regularly oversees the functioning of health facilities, liaise with government and other agencies in finding solutions to related problems, forward all health/ community development plans to the local government, this may be evident that the committee is active in such aspect of their operational function. Also the complete confirmation by 100% that resources available within the community are not identified and allocated to appropriate programmes, the committee does not select appropriate persons to be trained for PHC because no financial backings this making any training to be voluntary, activities of the village health workers are not supervised and support are not provided to the health workers making it evident that even though the committee might be active they are still loop holes in their performances and this may be ascribed to inadequacies on the part of the government as stated by the respondents.

Findings shows that the committee have to liaise with other officials in the community to provide health care and other development activities and there are active participation of such prominent people in the planning, implementation, evaluation of the activities/ projects.

The implementation of the ward health system in the wards remains a major hindrance to the performance of the system as the implementers and resource persons have diverted and forgotten the system as evidenced by 50%. The problem of the system goal not achieved in the wards is made evident by 100%. The complete absence of VDC & WDC for improvement of the system and PHC in the local

government could be a hindrance to effective primary health care delivery and community participation.

Major Findings

- I. The wards involved in this study include Amai and Obiaruku ward. Amai is divided into Amai 1 and Amai 2 locally which have two councilors, Obiaruku is also divided into Ogbe-obiaruku and Okotu Obiaruku locally. In the both ward, there is no active presence of the WDC, the VDC is not active because they are complaining of not being paid, the committees have not been operational and functional for a very long time (5 years according to the interviewees), however resource persons who are required to be among the committees includes the village health workers /health staffs, health coordinators, ward councilors are members of the committee.
- ii. This study reflects the operational standard of each committee, the data collected shows that all functions that are supposed to be carried out by the committee is being carried out by the urban and model primary health care centers, health coordinators, private sectors/NGOs, it shows that all activities carried out by the primary health care centers are organized by themselves alone and most times in conjunction with other health care centers or federal government of health. This committee consists of midwives, government staffs, health attendants, voluntary workers. This also shows that the ward health system was not fully implemented in these wards and the goal of the system has not been achieved.
- iii. According to responses given, the type of health facilities present in Obiaruku ward includes two primary health care centers, one general hospital, one catholic hospital and various private hospitals and other dispensaries, while the type of health facilities present in Amai includes one primary health care center, one private hospital. These facilities are managed by their various management structures such as PHC coordinators, health workers, CHEWs, midwives, nurses, doctors, health attendants. Responses also show that the facilities owned by the government are not adequately equipped for the full effectiveness of health care services.
- iv. The health workers presumed to be the most informed about the ward development committee and village development committee amongst other respondents.
- v. The health care centers in the both wards have a great dealing with the immunization programme and child and maternal health.
- vi. The concept of the ward health system is not recognized in the both wards.

Conclusions

In conclusion, it is clear from the results that the level of functionality of the ward health system is very low, the ward health system is not functioning due to the inactive presence of the ward development committee and village development committee and the high level of ignorance and knowledge lack on the part of the key implementers and stakeholders of the system. Lack of government statement on the need for this existing strategy to be well implemented in the local government and state and the need for the committee to function effectively.

- Most of the respondents welcomed the idea of the renovation of the ward health strategy if possible, this is an indication of the willingness of the people to ensure good primary health care provision.
- In Ukwuani local government area, PHC is majorly dependent on just the health workers and health care providers and staffs.
- The aim of the ward health system as stipulated by the NPHCDA has not been achieved in the both wards and probably in the local government
- There is no current knowledge on the ward health system and on how the local government PHC is suppose to operate.

Recommendations

There is bright hope for future prospect of ward health system in health care programmes and activities in the area as people are willing to assist in the struggle to achieve better health care services

The under listed are suggestions of the researcher based on the findings

1. The local government should focus attention on the establishment of primary health care machineries such as village health committee, health facility health committee, the ward health committee and the local government PHC committee; this shall also include training of village health workers.
2. The government health authority should intensify the implementation of the committee at each ward and ensure that they are put in place.
3. Funds should be provided to the committee members so they can operate efficiently.
4. All implementers and stakeholders must receive adequate and continuous information on the ward health system
5. The mass media should be optimally utilized to accomplish wide coverage
6. Inclusion of training on ward health in the school of health, medical curricula which will prepare them appropriately for primary health care services in the country.

Suggestion for Further Studies

It is my hope that this project will stimulate others to find out more about the ward health system strategy in other location of Nigeria thus further studies could be carried out on:

- a) Establishment of the ward health system; is it fully implemented?
- b) Attitude of local government health workers towards the ward health strategy
- c) Conception of the improvement of primary health care; a study of the ward health system.

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CHALLENGES OF MANAGEMENT OF MALARIA AMONG UNDER-FIVE CHILDREN IN NIGERIA: ROLE OF COMMUNITY HEALTH NURSING

Adeyemo Mordiyah Omolara A. (Mrs.)

R.N., B.Sc. (Nursing) M.P.H

Lecturer, Department of Nursing,

Ladoke Akintola University of Technology,

Ogbomoso, Nigeria

Email: omolaraadeyemo@yahoo.com

GSM: 08038033257

Oluwatosin O. Abimbola, B.Sc., M.Sc. Ph.D.(Nursing)

Senior Lecturer, Department of Nursing,

University of Ibadan, Nigeria

Email: aoluwatosin@yahoo.com

GSM: 08057070510

ABSTRACT

Malaria is one of the main causes of health and socio-economic burden in Sub-Saharan Africa countries affecting all age groups but with serious effect on children and pregnant women. This paper focuses on the role of community health nurses in managing challenges of malaria among under-five children. It examines the extent of the burden of the disease on the children and significance of prompt and correct diagnosis on effective management of the disease. It also explains prevention of malaria at primary, secondary and tertiary levels. Various barriers posing challenges to effective management of malaria are highlighted in the paper. In conclusion, the community health nurses are implored to identify and address prevailing local beliefs about causes of fever and the socio-economic barriers to accessing prompt health care for the children.



Introduction

Child mortality remains a sensitive indicator of a socioeconomic development and welfare of any nation (UNICEF 2008). Children are the most vulnerable population because of physiological, physical and cognitive demands. They are going through a period of rapid growth and development which is highly demanding in terms of nutrition, care and protection. Their principal activity is playing, as a result of this and aforementioned factors, they are vulnerable to different diseases and dangerous conditions or accidents. Malaria is one of those diseases that children are highly exposed to and causes high morbidity and mortality amongst them.

Malaria is the world's most common parasitic infection, ranking among the major health and developmental challenges for the poor countries of the world, particularly Sub-Saharan African countries and mostly among children less than five years old (WHO 2006). It is highly endemic and remains a significant public health disease in this area. About 74% of the population of the continent is estimated to be residing in highly endemic areas, and 19% are in epidemic prone areas while just 7% live in low risk or malaria-free areas (WHO 2006).

Malaria poses a great challenge to the African region as it hinders human development, indeed it is estimated that 50% of the adult population experience at least one episode of malaria yearly while the under - five children have up to two to four attacks of malaria annually (FMOH 2005). Even though it is difficult to know the exact burden of malaria episodes in Africa, it is observed to be responsible for up to 50% of outpatient cases and 20% of admissions (WHO 2006). It is estimated that

malaria could be responsible for an average annual reduction of 1.3% in economic growth in Africa ranging from 0.067% in Uganda to as much as 3.8% in Nigeria with many families spending a significant portion of their income on its treatment (WHO 2006). Children, particularly those who are still under five years and the pregnant women, are mostly affected. Thirty percent resultant deaths occur in children under five years while that of infants is about 28% (WHO 2008). The economic loss from attacks of malaria in Nigeria is approximated to be 132 billion Naira annually; this is accrued from costs of treatment, transport to the source of treatment, loss of man-hours, absenteeism from schools and other indirect costs (FMOH 2005). Malaria, being one of the greatest causes of child mortality, there are specific strategies that have been developed in Millennium Development Goals (MDG) interventions to ensure reduction of the mortality rate. The fourth goal of the MDG is to reduce child mortality by two thirds by year 2015 (UNICEF 2008).

The Malaria Burden

Malaria is recognized as a highly endemic disease in Nigeria and it remains one of the leading causes of morbidity and mortality in the country with prevalence rate of 919/100,000 (WHO 2008). It accounts for 40% of disease burden reported at the out patients department in the hospitals and 30% of all childhood deaths. It is also associated with 11% of maternal deaths (NDHS 2009). Transmission of malaria is perennial in all parts of Nigeria. In the southern part of the country; transmission is serious and spread throughout the year, while in the northern part of the country transmission is only serious during the short wet season and diminishes during the long dry season

(Abebe, Mosanya, Amajoh, Otsemobor, Ezedinachi, Afolabi, Fatumbi, Gemade, Oduwole, Akinpelumi, Sillah, Banda, Smith, Ibe, Yeboah-Antwi and Offei 2004) Malaria is both a cause and a consequence of underdevelopment and has a highly detrimental effect on economic and social development. Most of the deaths from malaria are from the progression of uncomplicated malaria to severe malaria (WHO 2008).

The burden of malaria is very huge on human beings to the extent that half of the world's population has been estimated to be at risk of malaria, and that about 250 million cases led to nearly one million deaths in 2006 (WHO 2008). Eighty-six percent or 212 million cases were in the African Region. Eighty percent of the cases in Africa were in 13 countries, and over half were in Nigeria, Democratic Republic of the Congo, Ethiopia, United Republic of Tanzania and Kenya (WHO 2008).

The average estimated number of deaths due to malaria in 2006 worldwide ranged from 610 000 to 1 212 000, out of these 91% (between 520 000 and 1126 000) were in Africa and 85% of the deaths occurred among under-five years of age worldwide while 88% of these were among children under-five in Africa (WHO 2008)

According to World Malaria Report 2008, the malaria cases in Nigeria in year 2006 were estimated to be 57,506,000 in all age groups while that of under-five children were 34,096,000. The malaria deaths for the same period were 225000 and 219000 respectively, and the case fatality rates were 0.39% in all age groups and 0.63% in under-five children. In 2010, the probable and confirmed malaria cases in all age groups in Nigeria were 3 873 463 while malaria attributed deaths were 197216 (WHO 2011). Even though there was remarkable decrease in number of cases in 2010 compared to 2006, the figures are still high.

Ecology, Etiology And Transmission Of Malaria
In order to establish effective management of malaria disease, it is necessary to understand its ecology. There are both intrinsic and extrinsic factors that must be considered because it is the interrelationship (host-parasite relationship) of these factors that will determine the occurrence of malaria as well as effective treatment and control (White & Ho 1992 as cited by Amodu et al 2006).

The intrinsic factors are those that affect the man (human), the vector (mosquito) and the parasite, while the extrinsic ones are the environmental conditions, the social, behavioural, economic and political as well as control and prevention measures.

Many studies have confirmed the strong relationship between all these factors and improper management of the illness (Oyewole and Ibidapo 2007, Stephen, Nsimba and Edmund 2008). Better understanding of ecology of malaria is vital for identification of intervention strategies that will result to proper control and eradication of malaria in any community. In furtherance to this understanding, Ferguson, Dornhaus, Beech, Borgemeister, Gottlieb, Mulla Gimnig, Fish and Killeen (2010) mentioned that "applicability of any vector control strategy will depend on the dynamic human component of vector ecology, particularly the political, social and economic factors that determine land and water use within afflicted communities".

Clinical manifestations in uncomplicated and complicated malaria

Most patients with malaria attacks present with fever, chills, headaches, muscle pain, nausea and vomiting. There are usually few cases of abdominal pain, or diarrhea (Orimadegun 2010). According to Orimadegun (2010) the presentation of these signs and symptoms in all malaria cases varies as thus; fever 96%, chills 96%, headache 79%, muscle pain 60%, palpable liver 33%, palpable spleen 28%, nausea or vomiting 23% and abdominal pain or diarrhea 6%. In acute stage, the symptoms are repetitive in classical cyclic paroxysm; while in cold stage, the patient chills and shakes and in hot stage, the patient is warm, has headache and vomiting. In sweating stage, the patient is weak, temporarily feels well, then the cycle repeats itself.

Acute malaria in children may lead to severe illness when it is not effectively treated. Orimadegun (2010) further stated that this may result into complications like hypoglycaemia, severe anaemia, respiratory distress, hyperparasitemia, prolonged hypothermia, increased vomiting or diarrhea, haemoglobinuria, renal failure, hyponatremia, cerebral malaria and death. When malaria becomes chronic in children, complications in form of anaemia, neurologic and cognitive impairment as well as malnutrition may occur thus resulting into impaired growth and development which subsequently increase infant/child mortality rates (Orimadegun 2010, NPC et al 2011).

A good knowledge of signs and symptoms of malaria will equip the mothers with ability to recognize when to start home remedies of bringing temperature down like exposure to fresh air and tepid sponging. This will also enable the mothers to give first aid treatment prior to taking the child to health facility for treatment. Knowledge of etiology, transmission and clinical manifestations of malaria is paramount in the management of malaria. It is the responsibility of the

Community Health Nurses to ensure that such knowledge is well imparted into the people with a view to correcting myths and misconceptions about malaria. The health education programme should be packaged in such a way that will assist the people to know the danger signs, be able to recognize them know when and how to take correct actions when those signs appear.

Management And Control Of Malaria

Consequent upon the high prevalence of malaria globally, the World Health Organization in collaboration with National malaria control programme in all the nations and some development partners are making renewed efforts to control malaria, and even moving towards elimination in some countries, based on the latest generation of effective tools and methods for prevention and cure (WHO 2008). The management of the disease includes; reduction or halting in transmission among human population particularly the most vulnerable group; the young children and pregnant women, through effective preventive measures. Improved recognition of malaria disease and standard case management including home-based management of fever and reduction of anaemia are inclusive. These management strategies are basically in three parts: reduction of "man-mosquito" contact, vector control and chemotherapy (preventive and curative).

Diagnosis of Malaria

Malaria is a common disease, yet it is difficult to identify it where there is no laboratory facility due to the fact that its symptoms vary and may resemble other diseases. Correct diagnosis is critically important because it will lead to rapid and appropriate therapy that will prevent progression of the disease. On the other hand if on investigation, no malaria parasite is found further explanations will be sought for the disease and unnecessary use of antimalarial drugs will be avoided. For effective management of malaria, WHO recommends that case management should be based on parasite-based diagnosis in all cases except in young children in high transmission areas and where there are no resources or there is need for urgent response (WHO 2009).

In 2011, WHO emphasized that "demonstration of the presence of malaria parasites is advised before treatment with antimalarial medicines, as diagnosis based solely on clinical symptoms is of poor accuracy and leads to over diagnosis of malaria, waste of antimalarial medicines, an increased frequency of adverse side-effects and increased drug pressure on resistant parasites." Microscopic examination of blood smears is the most widely used laboratory- based diagnostic test for malaria in individual patients and for epidemiologic survey. It has proved to be very

useful though labour intensive. The development of rapid test is a new trend in the process of diagnosing malaria. Massive provision of the test kits to health facilities in rural areas should be a better strategy for management of malaria. Community Health Nurses who are the primary service providers, through facility-based programmes are better positioned to carry out this test with a view to enhancing prompt diagnosis and treatment. Where there is paucity of health facilities and personnel, extension of the provision of the kits to patent medicine sellers has been suggested by researchers ((Ajayi, Falade, Adeniyi and Bolaji 2003).

Chemotherapy

The recommended treatment for malaria attacks is artemisinin-based combination therapy (ACT). Even though procurement of anti-malarial medicines through public health services increased sharply between 2001 and 2006, WHO observed from the National Malaria Control Programme (NMCP) data that access to the recommended therapy was inadequate in all countries surveyed in 2006 (WHO, 2008). The treatment policy states that the implementation of the national treatment policy is based on the Roll Back Malaria strategy. This include; establishment of a social movement in which the local communities, public and private sectors, all tiers of government and non-governmental development agencies come together in a partnership and network to carry out malaria control interventions. The key elements of the strategies for the intervention are;

- Patients with malaria should have access to appropriate and adequate treatment within 24 hours of the onset of the symptoms.
- Pregnant women particularly in their first and second pregnancies should have access to effective anti-malarial prophylaxis treatment.
- Insecticide treated nets and other materials should be available and accessible to persons at risk of malaria especially pregnant women and children under-five years of age.
- Epidemics of malaria should be recognized and steps initiated for their containment within one week of their onset (FMOH, 2005a p11).

Community Health nurses should anchor community social movement to ensure better intervention through implementation of the strategies. In Nigeria, the drugs of choice for treatment of uncomplicated malaria as recommended in the treatment policy are artemether – lumefantrine, amodiaquine – artesunate, dihydroartemisinin + piperaquine+ trimethoprim and artesunate mefloquine. For severe malaria, quinine injection, artemether injection, artesunate injection and suppository are recommended. It is the responsibility of the nurses to administer or promote usage of these drugs at correct

strength and dosage.

Prevention Of Malaria

Primary Prevention: At community level, individuals, families, and the entire communities need to be mobilized through health education and promotion activities targeted towards understanding the ecology of malaria disease, behavioural changes and better management of resources. The community health nurses must identify and address prevailing local beliefs about causes of fever and the socio-economic barriers to accessing health care.

At government level, there should be management of effectiveness of the health systems, health care should be of good quality, available, accessible, and affordable. There should be regular surveillance of malaria infection and disease. Policies and strategies should be translated to practices, and programmes should be monitored and evaluated.

The preventive measures include staying indoors during the night when the vectors are very active, screen windows and doors, using insect repellent, protect self by wearing socks, gloves, long sleeve dresses, and avoid dark cloths and strong perfumes that can attract mosquitoes (WHO 2006). Other form of self protection is sleeping under permethrin-impregnated nets or insecticide treated nets (WHO 2006). Management of the environment is a strategic preventive measure and this include clearing the bush especially in the forest area, , clearing the drains; eliminating stagnant water, ensuring proper sanitary and waste disposal and spraying of environment with insecticide with a view to preventing breeding of all species of mosquito.

Secondary Prevention: Secondary prevention involves improved recognition of malaria disease and standard case management including home-based management of fever and reduction of all forms of complications. The endemic countries like Nigeria are to promote use of artemisinin-based combination therapies and to implement policies that prohibit the production, marketing, distribution and use of counterfeit antimalarial drugs. The community health nurses could assist the government to ensure that these policies are translated into actions and the community members comply through their regular health education activities as well as community mobilization and participation. The World Health Assembly also discouraged the use of oral artemisinin-based monotherapies in public and private health facilities (WHO 2008).

Tertiary Prevention: Effective management of malaria illness to prevent development of complications is very crucial in control of malaria disease. This is only possible if all previous levels of

prevention are adequately taken care of. Where complications have occurred such as cerebral malaria causing brain damages, such children should be adequately rehabilitated.

Community Health Nurses have been found to have positive effect on reduction of child mortality and promotion of wellness in children (Pence, Nyarko, Phillipsand Debpur 2007, Ebuehi and Adebajo 2010). These nurses have acquired skill in synthesizing clinical nursing with public health nursing which subjected them to better understanding of multifactorial causes of diseases. With this knowledge and skills they utilize multidisciplinary approach in caring for the consumers of their services at primary, secondary and tertiary levels. They occupy a strategic position in developing and integrating child care into community and specialty care settings. In a study carried out in the Navrongo community in Ghana to assess the effect of four alternative organizational strategies on health service delivery in a rural and impoverished area, it was found out that in areas with village-based community nurse services, under-five child mortality fell by 14% during five years of programme implementation compared with before the intervention (Pence et al 2007). There were also 5% reductions in infant mortality, 18% reduction in early child mortality and 39% in late child mortality in the same study. The area where community members were trained as health care volunteers for the intervention was associated with a 14% increase in mortality instead of decrease (Pence et al 2007). The researchers were of the opinion that the results suggested that convenient, accessible professional nursing care can reduce child mortality in impoverished African settings.

Challenges Of Malaria Treatment And Prevention

Many studies have documented many factors militating against treatment and prevention of malaria disease (Oyewole and Ibidapo 2007, Ajayi 2005, Anumudu,Adepoju, Adediran, Adeoye, Kassim, Oyewole and Nwuba (2006) Idowu Senbanjo and Opreh 2008, Stephen, Nsimba and Edmund 2008, and Ebuehi and Adebajo. 2010).

The first major barriers are illiteracy status of majority of mothers and other care givers and local beliefs about causes of fever in children, which is always subjecting them to ignorance of actions to take when malaria occurs (Ajayi 2005, Stephen et al 2008, Ebuehi and Adebajo 2010). Many are not well educated about etiology and transmission of the disease; this is usually leading to late and wrong diagnosis, wrong medications and incomplete doses. Report of a recent pilot study in two rural towns in Egbedore LGA of Osun state depicted poor knowledge

of malaria, causes and home management. Only 16.6% of the respondents had high knowledge of causes, transmission and signs and symptoms of malaria while 60% of the respondents had low knowledge and 23.4% had average knowledge (Adeyemo 2011). Even though the number of respondents is not large enough for generalization it still shows that ignorance barrier exists in the rural communities, (Adeyemo 2011). Malaria illness is often accompanied with multiple complicated symptoms particularly convulsion and majority of episodes of the illness are treated at home using wrong, adulterated drugs and under or over dosage. Poverty plays a major role in actualization of adequate treatment and prevention of the disease. Many of effective drugs most especially the artemisinin-based combination, some of the preventive materials e.g. insecticide treated nets (ITNs) are expensive and not easily available. In malaria endemic areas poor environmental sanitation contributes immensely to mosquito-friendly environmental conditions that support survival and proliferation of the vector and pathogenic parasite causing frequent relapses of the infection. Rapid development of resistance by the mosquitoes to insecticide and the parasites (plasmodia) to antimalarial drugs is another factor militating against effective malaria treatment and prevention hence persistent high prevalence of the disease (Abdisalan et al 2006, Oyewole and Ibidapo 2007).

In addition, Abdisalan et al (2006) found out in their study that a child who lived in a homestead closer to a market centre where ITNs are sold was more likely to use nets purchased from the market than those who lived at longer distances. Other factors that are likely to deter ownership and utilization of ITNs are enlarged family size and single parenthood (Abdisalan et al 2006). However, an increase chance of using nets by children owning immunization cards has been observed (Abdisalan et al 2006). This might be associated with general health awareness from the immunization clinics. Other socio-cultural factors are strong belief in traditional healers, and health facility-based characteristics, such as unfriendly attitude of health workers and long distance, are significant factors deterring many caregivers from seeking prompt malaria treatment for children under five in the country.

Conclusion

The burden of malaria disease is still worrisome in Nigeria particularly among the children. Therefore, investing in the health of children and their mothers is not only a human right imperative; it is also a strong and quality decision and one of surest ways for a country to set its course towards a better future.

Most of the barriers militating against effective treatment and prevention stem from lack of education and poverty, and because of these; Nigeria could not meet up with the first global target of reducing malaria morbidity and mortality by half by 2010. For the purpose of achieving future successful community mobilization for prompt and effective treatment for childhood fevers, information, education and communication (IEC) campaigns should address local beliefs about fever, malaria and its ecology. It is very important that anti-malarial drugs be made widely available within the community to enhance success of home management of malaria fever. This is especially important in this country, where the majority of fevers are first treated at home. It is also important that malaria control interventions focusing on promotion of prompt access to appropriate and effective treatment should as well recognize and address other perceived and real barriers to malaria health-seeking behaviour, such as the cost of anti-malarial drugs in the community and private sector, accessibility to health facilities, insufficient number of health care providers, and empowerment of mothers as decision-makers at the household level. The socioeconomic status of the populace must be improved and available resources must be equitably distributed. All the strategies should be translated to effective programmes which should be well coordinated, dynamic and research focussed.

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Phone: +234 8023113691, +234 08151144603

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