THE PROBLEM OF SEWAGE DISPOSAL ON THE INCIDENCE OF EPIDEMICS OF DISEASE AMONG THE INHABITANT OF LAPAI LOCAL GOVERNMENT AREA OF NIGER STATE.

BY

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DEDICATION

This piece of work is dedicated to my late father Baba Kolo Moh'd Etsu Amu who answered the call of Allah on June, 1976, my living mother Alhaja Hauwawu whose prayers and tenderness I swim in.

To my wife Madam aishatu Momudu Kolo as well as my children whose untiring patience, courage, moral and mutual understanding of ourselves made it possible for me to successfully complete my post-graduate (Diploma) programme.

CERTIFICATION

This is to certify that this project work being submitted by Mamudu Kolo Ezhi (PGD/GEO/98/99/011) is my original work and has not been submitted before by anybody for any purpose and meets the requirement governing the award of PGD in Environmental Management, Geography Department, Federal University of Technology, Minna.

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ABSTRACT

This study examined the problems of improper disposal of Sewage on the incidence of diseases amongst the inhabitants of Lapai Government Area of Niger State.

The variables covered in this study were filthiness as related to the surrounding environment, water pollution, air pollution and its pollutants, sewage disposal, population and unplanned structural buildings (Slums), attitude and habits as well as facility, its inefficiency and non-availability.

The sample population for this study comprised of Two hundred (200) health workers drawn from randomly selected eight wards out of Ten wards in Lapai Local Government Area, (the selected wards gave birth to the selected health centres, dispensaries, maternal and child health centres and the general hospital).

Questionnaire was the only instrument used in this study and it was the 2 points type of Agree and Disagree. The data collected were analysed using frequencies and percentages and the statistics of chi-square (x^2) was used for testing the hypotheses for the acceptance or rejection at 0.05 level of significance.

The major findings of the study were that, there was a significant influence on the impact of filthiness, water pollution, air pollution, refuse and sewage disposal, population and unplanned structural buildings (slums), habits and attitudes and facility on the incidence of the Epidemics of diseases amongst the inhabitants of Lapai Local Government Area of Niger State.

Based on this, some recommendations were made to avert or ameliorate the incidence of the disease in Lapai Local Government Area of Niger State.

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CHAPTER ONE

INTRODUCTION:

SEWAGE DISPOSAL IN RELATION TO ENVIRONMENTAL HEALTH:

Human sewage in relation to Community Health has been a subject of great concern. The importance to or society and if our primary Health Care delivery is succeed, especially health for all by the year 2000 cannot be over emphasised.

The need to have and maintain clean Environment in our communities cannot be over emphasised in view of the numerous health hazard associated with filthy environment.

Sewage disposal is an important part of environmental health ineffective sewage disposal is often associated with the lack of, or inadequate water supply, other sanitary facilities and with low economic status of the people.

Every being has its closest associate as the immediate environment. Immensely, various events have been affecting the air we breath, the water we drink and the open green space we are accustomed to using for leisure. The problems arise from human use of land, air and water as pressures on land and resources are growing fast. To these circumstances, United Nations Environment programme (UNEP) have played important roles in developing knowledge of environmental problems and how to solve them.

The environment is a term applied to "all conditions surrounding an individual, which are not part of the person, plant or animal itself". Grilling

(1978). The physical environment encompasses such things as geographical and chemical conditions, the later including the composition of the air, the conditions of food and many other factors. The world Encyclopaedia Britannica (vol. 17, 1973) defines sanitation as "a field of public health, which involves man's efforts to control his environment to prevent and control disease. Sanitation also includes personal cleanliness which gives protection against diseases". However it is well known that there is relationship between the disposal of sewage and the socio-economic standard of the population in which it gives a reflection of their health standard. Some of the common diseases such as cholera, Typhoid and paratypoid fever , the dysentries infant diarrhoeas, Bilhaziasis, ascariasis, Hook worm and other similar intestinal parasites are associated with poor water supply and sewage disposal. Adequate and effective sewage disposal system in community can effectively control out break of the above mentioned diseases. There are simple and cheap methods of sewage disposal, such as the pit-latrine, septic tank. Water flush system, the privy system and effective drainage systems.

All these are acceptable to the community and quite sanitarily. Every human society is said to possess a two way relationship with the environment he occupies. Man modifies the natural environment, whether by hunting and gathering activities, the pursuit of agriculture or the complex activities of urban industrial life Udoh (1990). The environment which is part of the product of man himself, also influences the well being of the human

population that occupies it. Its particular characteristics expose and predispose the human population to various form of diseases; infectections and nutrition. On environmental health one concentrate on identifying the agents which predispose an individual that constitute to its responses which provoke the response call the disease. Nigerian environment like in all developing countries predispose their members to variety of infections and parasitic diseases and to a certain severe forms of malnutrition. Added to these problems are the manifestation of a new set of diseases closely related to a urban industrialised environment, diseases related to environmental pollution, stress induced patterns of ill-health and social pathology, and a growing number of rapidly evolving viral diseases that continuously challenges the technology of modern medicine.

It is worth nothing that before (that is as to the time of writing this thesis) in Lapai Local government Area of Niger State, a substantial number of adults (males and females) including animal habitats like goats, sheep and ram were invaded by some diseases like gastroentorities which has claimed so many lives. The cause was unknown and treatment posed challenges to both traditional and orthodox medication.

"A list of the more familiar physical conditions that affect health include water, air, housing, food noise and waste management." Inclusive also are "hazards of occupation and nutritional diseases." Udoh (1978) In line with these aforementioned variables, this research shall erotically find out about.

The drainages, sewage and dug pits where liquid wastes collect are not at all treated. Hygienically the treating of these

sewage and dug pits suppose to be carried out intermittently by application of germicide and insecticide to reduce the activities of germs and disease vectors but this is not done. If applied these vectors that are eventually going to breed there for multiplication will either be killed or rendered in active thereby causing no or less harm to the surrounding dwellers.

Ransome-kuti (1991) has this say, "as the disease spreads, it may become endemic in areas where poverty, low levels of hygiene and lack of potable water favour its survival." So fatality rate to be suffered from any disease should be "unacceptably high" he added.

AIM AND OBJECTIVES

This study is aimed at evaluating the problems associated with improper disposal of sewage on the incidence of epidemics of diseases among the inhabitant of Lapai local govt. area of Niger State.

1. To detect the sources of pollution as a result of improper disposal of sewage.
2. To know the health problems associated with this pollution.
3. To mobilised the inhabitant on the need to maintain the proper method of sewage disposal.

STATEMENT OF PROBLEM:

MAJOR PROBLEM

In both rural and urban areas today environmental health has become a great matter of concern to all citizens. It is view of this, that this study focus on improper disposal of sewage in Lagai local government. Which comprises of towns and villages.

SUB-PROBLEMS:

(1) Will filled up toilet, filthy gutter foul water responsible for the claim of out break of Gastro-intensities in Lapai Local Government.

(2) Will habit and attitude of inhabitant in Lapai local government area of Niger State towards healthy environment be responsible for the incidence.

(3) Will regular emptying of liquid wastes from sewage, pit and drainages producing foul odour be responsible for the incidence of gastro enteritis amongst inhabitants of Lapai local government area?.

Will inadequate health personnel's, facilities, equipment and virtually absence of some be responsible for the outbreak of gastro enteritis amongst the inhabitants of Lapai local government area of Niger State?.

ABOUT THE STUDY AREA:

Lapai, is watered by rivers. On the world map lapai lies between latitude $6^{0}20'$ and $7^{0}15'$ North of the equator and longitude $5^{0}40'$ and $6^{0}33'$ East of the Greenwich Meridian. This geographically places the area by sharing

boundaries with Agaie L.G.A. to the west, Gurara L.G.A. to the North, Suleja to the East, to the North East with River Gurara, Paikoro at the South -West.

The duration of sunshine ranges from 7-9 hours per day from January through April /May. In months of July and August it drops to a mean of 4 hours per day due to increase in covering cloud and as this decreases by September it rises again. Lapai experiences dry and rainy seasons every year in, year out. The dry season is between November and March with Harmattan dust haze around November - January and rainy season from March to October.

The highest temperature is recorded in the months of February/March at 38^{o}C during the dry season. The Vegetation in Lapai is predominantly Guinea Savannah, rain forest, wood savannah, park and shrub savannah. The soil is tropical ferruginous soil which is reddish in colour.

Lapai is one of the oldest local government on Niger State. it came into existence when local government was increase from 8 to 9 from the defect Estwan local government in 1976. The river that passes near lapai is River Estwan. The mentioned river provide the area with irrigation endowment which make possible production of crops like rice and vegetable of all species during the year round.

DELIMITATION OF THE STUDY

This study was delimited to the following:

(1) A sample population of health workers from the Ten wards in lapai local government area of Niger State.

(2) Variables of population density, structural planning, refuse and sewage disposals, air pollution, water contamination or pollution and attitudes as they influence the out bread of diseases in relation to people's health.

(3) Use of structured questionnaire and scheduled visits to Rural Hospital, Health Centres, dispensaries, sanitary inspectorate unit and Maternal and CHILD Health Centres for the retrieve of the questionnaire and collection of information and health records.

(4) Use of descriptive statistics of (frequencies and percentages) and the non-parametric statistics of Chi-square was used to test the hypotheses at 0.05 level of significance.

LIMITATIONS

1) Some questionnaire forms were rejected due to non-correct completion while some were not returned, though very few.

2) Other limitations like respondents false or unhonest responses that cropped up were however averted as the respondents were assured of their confidentiality of responses. And that their responses would just be used for the purpose of this research, which would have no reflection on their persons.

3) Some of staff were sceptical of the whole exercise for fear that their unit or department's inadequacy would be exposed.

Some attempted to influence others to give inaccurate information.

SIGNIFICANCE OF THE STUDY

Environmental sanitation has been a nation wide programme that has gained an acceptance by the generality of the Nigerian populace. This study aimed at contributing to the already existing body of knowledge about good sanitary environment and aesthetic scenery.

It is in the good aspiration of the researcher that the data collected for this study was interpreted and used to improve the healthful standard of the people through good sanitary environment.

This study would serve as a guide to the health personnel and sanitary inspectors as well as non-governmental organizations (NGOS) as a vehicle of further enlightenment to the public in order to enhance good health habit amongst the people.

The study also aimed at bringing out and directing people attention towards good and adequate use of the available waste disposal facilities like the land fills, communal depots and efficient strategies of disposal.

CHAPTER TWO

REVIEW OF RELATED LITERATURE:

CONCEPT OF ENVIRONMENTAL SANITATION.

The healthy living of an individual depends solely on aesthetic and healthy nature of the environment he/she lives in because of the influence it has on his/her physical and emotional health. A good sanitary environment ensures emotional well being, beautiful scenery, clean and orderly society.

The term environmental sanitation consists of two distinct words, environment; referring to the external influences that affect individual's physical for good health such as fresh air, water, shelter, food sleep, rest and protection against disease attacks. On the other hand sanitation refers to the tendency to react towards the promotion and maintenance of health. To physicians the term "environment" is a nebulus term defiling precise definition. As such smith (1986) sees it as "the thin layer and life supports called the biosphere, including the earth's air, soil, water and living organisms". While Daman (1994) sees environment as the "chemical and biotic factor that act upon an organism or an ecological community and ultimately determine its form and survival".

From the above assertion and views one deduces that the effects of environment are multifarious and multidimensional. In both the rural and urban areas today wastes are produced by individuals and institutions. These wastes are generated as an object becomes obsolete or un-usable and

these include municipal wastes (combination of residential wastes and commercial wastes). They are discards of homes, offices, motor parks markets, streets, store etc. our attitude and habit of 'throw-away' worsens the situation which now crave for an urgent action to avert the impending catastrophe.

Udoh (1978) opined that "the physical environment are known to have very far reaching consequences for health------". He further stressed that "untreated water, careless disposal of solid and liquid human waste and over crowding may pose health problems for their victims".

This clearly draws our attention to the fact that rapidly growing quantities of wastes both solid and liquid gradually degrade the aesthetic nature of our environment which now pose threats to human health and the environment itself. A situation in Lapai calls for this urgency as regards the outbreak of the Gastro-intestinal disorder disease amongst its people where victims copiously vomit and passed out watery to an unconscious level.

The worsening transformation of the environment has been the responsibility of man himself. The clean up exercise of gulters along the roads has been the responsibility of the government. But the local government personnel purposefully charged in doing these works either do it unsatisfactorily or totally refusing to do it by dodging, since adequate supervision is lacking.

Along side, Anton Chekhov (1979) has this to say that, man has been blessed with good sense of reasoning, the power to created, to that he can

add to what he is been given. But up till now he has not been a creator, only a destroyer. Forests keep disappearing, rivers dry up, wild life's become extinct, the climate's ruined and the land grow poorer and uglier everyday. So bringing environmental standards up to scratch should be a task to be accomplished, for the stakes are high, and time may be running out.

WATER POLLUTION

some impurities in tap water are inevitable. These are derived both from the different sources of water and from the treatment process. Water quality is of prime importance. Traditional water sources in towns and cities are more liable to faecal pollution and liable to infect more people, than in rural areas. Domestic water is extracted from ground water, reservoirs or from streams and rivers depending on settlement area of the people. Groundwater in agricultural area is at increased risk of contamination as nitrate based fertiliser and pesticides applied on crops can leach into the supply.

Lapai local government area main sources of water supply are at this risk. The Etswan water works from where water is pumped to the treatment plant could been seen taken its sources of water from where agricultural crops are intensively grown. It was also observed that water pumped through pipe net-work for public consumption around (May - June 1996) was untreated and not at all chlorinated. Around this time in point the severity of Gastro-intestinal other diseases attack was recorded high. Water borne transmission occurs when the pathogen is in water.

SEWAGE DISPOSAL

Sewage is wet waste, possibly infectious and hard to get rid of. It is a trump of skill and engineering to rid a large town of its sewage, to purify it unobtrusively and without polluting the town's water supply.

Some houses use water closet while others have the squat-pan where faeces together with all waste water from washing and cooking, flow through drain pipes called sewers to sewage disposal work. The water flows to the septic tank, while the organic sludge is left in the settling tanks, the sludge produce no smell and can be removed, dried and use as manure for crops. The sewage disposal consists of excreta from lavatory pans, waste water from sinks, baths etc. Its main functions is to:

(a) Remove the suspended solids, the sludge from the flowing waste water, and

(b) To convert the organic compounds by oxidation into substances that will no longer decompose.

To places or areas where regular supply of water is not assured the method become a menace of use.

Other safe methods include, the use of pit latrine, this should never be dug near any source of water supply and should not be dug beyond water level. The top should be covered with a concrete slab with an opening which should remain closed with a cover after use. It can be walled and roofed with galvanized corrugated iron sheets or any other suitable roofing sheets. The top and surroundings should always be kept clean tidy to prevent flies

and other rodents from menacing up of the area. The other safe method too is use of the bore-hole. Another recent method is that of the construction of ventilated improved pit. (V.I.P.) Latrine. Here deep pit is dug with single three pit slabs-namely, the vent, the squat and cover slabs, installed over it for use. It can also be walled and roofed.

Any type of latrine needs good maintenance and will become fouled and offensive without it. If this is allowed to happen the latrine will either not be used or will become a major health hazard in itself. There is evidence that the use of a fouled latrine in rural areas provide a greater health hazard than the practice of casual defecation in the surrounding bush.

DRAINAGE SYSTEM:

Sewage collection and disposal through water carriage system. The drainage work in Lapai outstandingly remain uncompleted. Each an house hold can be observed as having a dug soak pit(s) of its own where all waste water are drained into. These soak pits are emptied periodically when filled up with waste liquid and the sludge. Due to lack of treatment, that is application of germicide and insecticide the soak pits or gutters as called, produce foul smell around its site when emptying. In fact in Lapai we lack an ideal concerted gutter and sewage construction. Some house hold even leave the waste water from their houses to flow on the passage ways without draining it into a dug pit or given it good direction to flow to. This could be easy by making a shallow gutter to drain it away. In ideal cases, pipe fittings should be used to drain the waste liquid from various houses

into a soak-way system or soak-pits as may be provided by each an house hold. Foul smell from these soak-pits is a nuisance and the drainage from them is a serious danger to any water supply in the neighbourhood.

Micro-organisms have important activities to play on biodegradable substances by decomposing them biological processes into harmless materials. For this reason not all micro-organisms are to be killed but cultured. Instead the disease vectors may be trapped for they are responsible for the spread of certain diseases and contamination.

Tilting away from filthiness should be our realistic surrounded by filthy matters of all kinds, very personal hygienic and serious over crowding.

As matter of concern to Nigeria community, the Federal Government of Nigeria established the Federal Environmental protection Agency (FEPA) through Degree 58 of 1988, as an autonomous body charged with the overall responsibility of protecting the Nigeria Environment marked the delightful turning point in the chequered history and mode of environmental protection in this country. Roderick (1975) pointed out that for most environmental problems, four interested parties must understand themselves and co-operate. These according to him are "the public, the labour unions, Industry and Government." Thus the overall approach should be participatory whereby the activities of any given group complement those of others in the context of goals and objectives that bring about a sustainable environment.

CHAPTER THREE

RESEARCH METHODS AND PROCEDURE

This study was carried out to find out about the impact of sewage disposal on the incidence of Epidemics amongst inhabitants of Lapai local government area, Niger State.

This Chapter was designed and discussed under the following sub-headings for systematic collection and analysis of data for this study.

(1) Research method

(2) population

(3) sample and sampling technique

(4) Research instruments

(5) Reliability and validity of the research instruments.

(6) Procedures for Data collection.

(7) Method of data analysis

(8) Pilot study

RESEARCH DESIGN

The descriptive survey research design was used. Best and Jacobs (1981) said, to obtain information concerning the current status or phenomena descriptive. Survey should be used. This is because they are directed towards determining the nature of a situation as it exists at the time of the study. It was asserted that descriptive design method is often used in this type of research as it describes, interprets and is concerned with

conditions or relationships that exist, opinions that are held, processes that are going on effects are evident or trends that are developing.

Therefore the descriptive design method selected for this study allowed for in depth study of the situation of diarrhoea and vomiting , otherwise gastro-enteritis that invaded inhabitants of Lapai Local government area, Niger State and as it relates to environmental variables.

POPULATION

The target population for this study was made up of Health workers in Rural Hospital Lapai and those in Dispensaries and in health centres within Lapai local government area of Niger State.

SAMPLE AND SAMPLING TECHNIQUE

Since it was not practicable to use all the health workers in Lapai local government area of Niger State, the researcher decided and selected randomly a total number of 160 health workers as his respondents. A stratified sampling method was used in selecting from the health workers in Rural hospital Lapai, sanitary inspectorate unit of the local government, while Maternal and child health centres and dispensaries were selected from the primary health care unit of Lapai local government area.

From the total number of Ten wards in Lapai local government area eight were randomly selected from which the 200 respondents were selected at random too.

The eight randomly selected included:

NAME OF THE WARD	HEALTH FACILITIES
1. LAPAI CENTRAL	RURAL HOSPITAL LAPAI
2. LAPAI NORTH	BASIC HEALTH CENTRE LAPAI
3. EBBO "	DISPENSARY EBBO
4. GULU	BASIC HEALTH CENTRE GULU
5. GUPA	DISPENSARY
6. MUYE	BASIC HEALTH CENTRE, MUYE
7. BIRNI MAZA	DISPENSARY
8. DUMA	DISPENSARY.

TABLE 3:1: THE EIGHT RANDOMLY SELECTED WARDS WITH RAW NUMBERS AND PERCENTAGE FIGURES OF THE RESPONEDNTS ACCORDING TO UNITS.

WARDS	NUMBERS OF RESPONDENTS	PERCENTAGE
1. Lapai central, rural Hospital Lapai	17	8.5
2. Lapai North rural health centre Lapai	9	4.5
3. Ebbo, Dispensary, Ebbo	13	6.5
4. Gulu, Basic health centre Gulu	35	17.5
5. Gupa, dispensary Gupa	80	40
6. Muye Basic health centre Muye	11	5.5
7. Birni Maza, Dispensary Birni Maza	10	5
8. Duma, Dispensary Duma	25	12.5
TOTAL	**200**	**100.0**

The above table 3:1shows the tallies of the respondents randomly selected according to the number or health staff capacity of the health

departments at the selected wards. The total number of the respondents selected stood at 200 represented by 100% for fair and convenience in distribution of questionnaire forms.

RESEARCH INSTRUMENT

the research instrument used for this study was self developed structures questionnaire which was vetted by the researcher's supervisor. Likert' attitudinal rating scale of "Agree". Disagree") format was used. The respondents reacted to each item on he questionnaire by ticking ( ) from the alternatives given to each question item. This format was used. YES OR NO which does not give room for wider scope and against the essay structured type, given the maximum amount of freedom in responding which makes scoring a chore.

RELIABILITY AND VALIDITY OF THE INSTRUMENT

The obtained results of the pilot study carried out prior to the administering of questionnaires to the research respondents was used to ascertain the strength of reliability of the instrument. While the validation of the questionnaire was consciously ensured by taking expert views of lecturers in the Department Geography, Federal University of Science and Technology, Minna.

PROCEDURE FOR DATA COLLECTION

The aim was to provide further details or sources of information used in this study. Both the primary and Secondary sources were used in the collection of data for this study.

SECONDARY DATA

Before the collection of primary data, available sources of information about the study was collected mainly from thesis, dissertations, books, reports, journals, seminar papers and other published and unpublished materials on Environmental sanitation and problem of sewage disposal.

PRIMARY DATA

The structured questionnaires were distributed to various respondents in their locations by volunteered research assistants. The administration of the questionnaire forms was carried out by these research assistants especially those for the Rural Hospital staff and the sanitary inspectors Unit. Wait and collect on the spot was not practicable but most respondents tried on meeting up the scheduled arrangement for the collection.

A total of two hundred 200 questionnaire forms were distributed to the respondents through the research assistants and the researcher himself.

One hundred and sixty (160) useable questionnaires were successfully returned and these were used for the analysis.

DATA ANALYSIS

The completed questionnaire forms from the respondents were collected, coded and analysed. The descriptive statistics of frequency and percentages were used to analyse the data. The chi-square (x^2) test was used for testing the hypotheses at 0.05 alpha level of significance.

PILOT STUDY

The pilot study was conducted prior to the actual study, purposely for instrument validation. The pilot study was carried out at Gulu district a place 22 kilometres away from Lapai town where 30 available health workers were used as the respondents. Delays in collection and misunderstanding of rating scales were experienced and these served as guides during the administration of the instrument at the actual study area, Lapai local government area, Niger State.

CHAPTER FOUR

RESULTS AND DISCUSSION OF FINDINGS

This study aimed at identifying the impact of sewage disposal on the incidence of Epidemics amongst the inhabitants of Lapai local government area of Niger State.

This chapter deals with the results, analysis and discussion of findings. The questions which tested the hypothesis formulated were itemised in 'B' part of the questionnaire form while the 'A' part is on the Socio-demographic data of the respondents.

Two hundred (200) questionnaire forms were distributed for administering to the respondents and one hundred and sixty (160) useable ones were successfully returned and collected by the researcher.

In the preceding paragraphs, information on the respondent's demographic data were supplied in raw numbers and percentages while the itemised sub-hypotheses were supplied in percentages as well as on the chi-square (x^2). This was used to test the acceptability or rejection of the sub-hypotheses in the first chapter of this project work. The sub-hypotheses, for convenience and coherency or work were treated under variables identified on the topic.

TABLE 4:1 SOCIO-DEMOGRAPHIC INFORMATIONS:

The table below presents information of the respondents according to their units of departments of work.

UNITS	UNMBER OF RESPONDENTS	PERCENTAGE
RURAL HOSPITAL	72	45
DISPENSARIES	10	6.25
PRIMARY HEALTH CARE	31	19.38
HEALTH CENTRES	47	29.37
TOTAL	**160**	**100**

In table 4.1 above 45% of the respondents were from the only Rural Hospital in Lapai while 6.25% of them were from the dispensaries within the local government area of Lapai. The percentage number of 19.38% were from the primary health care unit which included the sanitary inspectors while 29.37% representing 47 respondents were from the health centres totally 100% responses of the total number 160 respondents.

TABLE 4:2 RESPONDENTS WORKING EXPERIENCE

The table below presents the respondents working experience as distributed in ranges of years.

RANGERS OF YEARS	NUMBER OF RESPONDENTS	PERCENTAGE
1-5 YEARS	121	75.63
6-10 YEARS	10	6.25
11AND ABOVE	29	18.12
TOTAL	**160**	**100.00**

The above table shows a high concentration of 75.63% of the respondents representing 121 respondents out of 160 within 1-5 years of working experience. This respondents feel about the current trends of our modern society in terms of Epidemics and the sanitary level of our society. The older experienced respondents also showed a reasonable percentage, for

they compare what obtained in the past and what is currently obtaining now as per our community cleanliness drainages and gutters.

HYPOTHESES TESTINGs

SUB-HYPOTHESIS I

Environmental degradation, wastes and filthiness around dwellings will have no significant influence on the incidence of Epidemics in Lapai local government area of Niger State.

Along the line with other assertions, Nigerian environment like in all developing countries predispose their members to variety of infections and parasitic diseases and to certain severs forms of malnutrition, (Udoh, 1990).

It is agreed that filthiness bring about certain occurrences of some diseases but there is no record to show the current link this may have with the incidence of Epidemics. The researcher is of the view that since the incidence of Epedemics in Lapai was of abrupt nature it must have its origin to other agent apart from the filthy environment since this ugly scenery has been long in the community and no case of this nature had been reported.

Similar studies seem to support this finding. Aliyu (1995) stated that, foul small from soak away pit become a nuisance and the drainage from them is a serious danger to any water supply in the neighbourhood. In another cohort study conducted to determine whether the drainage of household sewage is associated with gastro intestinal disorders shows that the relative risk was significant.

The researcher feels that the open soak-away pits, drainage and gutters around our buildings seem to be a breeding places for most of the disease vectors and this pose a health hazard to us. Stagnant water, sludge and other barriers found in our drainages, soak-away pits.

This finding is in line with some earlier findings. Folarin (1980) observed that frequency of occurrence of parasitic infection and intestinal diseases are the to non-provision of adequate toilets facilities and misuse of the few existing ones. Vital medical facilities and equipments are inadequate or totally absent from our health centres and the general hospitals, making them a mere consulting centres, observation made by Usman (1995). Situations of this nature normally give room or chance for wrong diagnosis and thereby worsening the case.

The researcher is the view that both our medical centres and referral centres be well equipped in term of personnel and tools. A situation where lacking of or shortage of qualified staff and tool polarized a mild case may become dangerous instead of ameliorating the situation with ease and fast, accurate diagnosis.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

This study was conducted in order to identify and ascertain the impact of environmental sanitation particularly sewage disposal on the incidence of epidemics amongst the inhabitants of Lapai local government area of Niger State.

The hypotheses of the study were rallied round the variables of environment filthiness, water pollution and contamination of its sources, air pollution, refuse and sewage disposal, population and slums, habits and attitudinal influences and lack of or inadequacy of facilities in terms of personnel and equipment (diagnostic tools).

The main hypothesis for this study was that the impact of environment sanitation, population density, improper refuse and sewage disposal, slum structures, inadequate facilities and attitudinal level of the people will have no significant influence on the attack of Epidemics amongst the inhabitants of Lapai local government area of Niger State.

Chapter two of this study dealt with review of the related literatures. The correlation, relationships and differences or disagreements in past studies and this study were put at parallel comparison for assessable analogies. While chapter three was on treatment and how sampled population was drawn from the total population as well as the collection of

data. The instrument used for data collection was self structured questionnaire.

Chapter four epitomised the analysis of data, interpretation and discussion of the results. The data collected were coded, built into frequencies and percentages for analysis. The data for each sub-hypothesis was subjected to x^2 analysis and were either accepted or rejected as the case may be. The observed value of chi -square (x^2) was tested at 0.05 significant level.

After subjecting the responses to the chi-square (x^2) test, it was found that, the all eight sub-hypotheses were rejected and none was accepted.

CONCLUSION

From the study, it is evident that there are refuse and sewage disposal problems in Lapai especially that of irregular collection of wastes from the few existing communal depots and from the land fills which become a heap-pile of mountainous wastes. This immensely contributed to refuse dump around or even within the residential dwellings, thereby deteriorating and degrading the aesthetic scenery of the environment and causes the blockage of existing gutters and drainages.

Almost all of the homes in Lapai can be observed as having no concert system of waste water disposal generated domestically, there is lack of dust-bins for collection and packing of wastes of solid or liquid in nature. This poses a serious health risk to the residents of such house holds and also accounted for the deteriorating environment quality in Lapai. This situation

encourages people to bring out of their homes collected wastes and dump in open spaces around their residence or in nearby gutters or roadsides which cause a more devastating problems during rainy seasons for blockages divert running and domestic water.

In fact there is that general awareness of the side effects of improper sewage disposal going by the high percentage of responses against environmental pollution possible or causing a diseased situation.

It is their believe that when the home is sanitized, it prevents spread of diseases, enhance the quality of environment and thereby preventing blockages and pollution.

RECOMMENDATIONS

Based on the findings of this study, the researcher has following recommendations to make in order to prevent future occurrence. All existing heap-pile refuse dumps around the dwellings must be cleared immediately to avert health hazard and prevent pollution. Each house hold should arrange for adequate domestic waste disposal system so as to ensure proper sanitation and for easy collection by the local government refuse collection crew.

Dustbins should be properly covered to prevent flies perching on the wastes especially the wet ones and this will as well prevent animals from exposing them, littering the environment thereby blocking the drainages and gutter. This will go a long way in enhancing the quality of the environment sanitation and make for over all efficient waste amagagement.

The Niger state Government in conjunction with Lapai local government administration should provide adequate supply of facilities, human, logistic and financial resources necessary for effective implementation of efficient waste management in our environment.

Lack of conceptual swage system (UNDP '79) clearly indicates that human waste disposal facilities are not sufficient available. It is common therefore, to find human waste disposed off very close to settlement areas. It is indeed disheartening to find human faeces disposed indiscriminately because of inadequate provision for public toilets. And even if provided, maintenance due to insufficient supervision and lack of regularity in water will turn them to a nuisance rather than blessing. To ensure blessing of provision of such facilities, Government should ensure regular water supply, efficient waste removal system, accessibility to public and maintenance personnel.

Waste management board should be established and charged with the responsibility of packing away wastes using trucks or carts from various wards in the local government. The board can make a blanket charge on those who make house basis arrangement which will oversee the general legal/enforcement department which will oversee the general compliance and punishment of defaulters.

Present efforts of the local government primary health care is well appreciated but should endeavour to increase the staff strength especially

the creme in charge of collection of refuse to allow for wider coverage and increased collection frequency.

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