THE USA JOURNALS
THE AMERICAN JOURNAL OF SOCIAL SCIENCE AND EDUCATION INNOVATIONS (ISSN- 2689-0811)
VOLUME 06 ISSUE05

PUBLISHED DATE: - 07-05-2024
DOI: - https://doi.org/10.37547/tajssei/Volume06Issue05-05 **PAGE NO.: - 61-73**

RESEARCH ARTICLE **Open Access**

ASSESSMENT OF CONCIOSNESS, VIEW AND PRACTICES OF HOUSEHOLD ON ENVIRONMENTAL SANITATION OF KADUNA STATE

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Abstract
This research was designed to examine and analyze , the assessment of consciousness ,view and practice of house hold on environmental sanitation of kaduna state of Nigeria , Sanitation is a way of life , it is the quality living that is expressed, in clean home, clean farm, clean neighborhood and the entire community. One level of civilized living to which a community has attained is expressed by the quality of environmental sanitation , human health is closely to the total environment, that is, physical, biological and social in which people live. Effective sanitation through integrated approach to sewage and refuse disposal in Nigeria is an important way of reducing the incidence and prevalence of disease condition and of improving the quality of life. Through integrated approach to sewage and refuse disposal in Nigeria is an important way of reducing the incidence and prevalence of disease condition and of improving the quality of life , recommendation were indicated which include that government should swing into action by providing various measure in order to prevent and reduces diesease in the kaduna town. our water should be properly treated by adding chlorine to it before drinking and bathing with it , we also advice to keep clean areas where food are prepared and these food should be properly covered to avoid outbreak of a diesease.

Keywords Assessment , House hold , View , Consciousness , Practice , Sanitation , Kaduna , Environmental , Town.

INTRODUCTION

Every increasing industrialization and urbanization has been polluting the environment, which has adverse effect on human health. Most of the infectious and non-infectious diseases that have been endemic and epidemic in different societies have resulted from various human activities within the environment (Rene, 1994). Advancement in science and technology, industrial revolution and population explosion, all combine to increase the amount of pollutants generated in the environment, posing serious threat to- human health(Steve, l984).

Environmental sanitation refers to the process of taming the environment so that it does not constitute hazard to man. It is the process of controlling all those factors that constitute or may contribute direct or indirect effect on man's physical, mental and social well-being and his society (Ubah, Ajala& Liman, 2003).

Environmental problems have become a priority on the world political agenda. This is inevitably linked with the general degradation of the environment

which calls for ultimate attention. The objective of environmental sanitation is to create and improve the quality of the environment and control all those factors that are harmful to health (Park, 2003).

Conceptually, sanitation is a way of life. It is the quality of living that is expressed in the clean home, clean farm, clean neighborhood, and of course, the entire community. Being a way of life, it must come from people. It is based on knowledge that reflects on the attitude and practical obligation of individual members of the community. The level of civilized living which a community has attained is expressed by the quality of its environmental sanitation (Ubah, Ajala& Liman, 2003).

Human health is closely related to the total physical environment, biological and social in which people live. Generally, there is a health crisis endured by the large section of the Nigerian communities, including Kebbi State. This is largely due to disease pathogens carried by contaminated food, water and air. Numerous infections and infestation of man are spread through poor sanitation (Ubah, Ajala& Liman, 2003).

Effective sanitation through integrated approach to sewage and refuse disposal in Nigeria is an important way of reducing the incidence and prevalence of disease condition and of improving the quality of life (Ubah, Ajala and Liman, 2003).

Sanitation and Water Supply

Much of ill-health which affects humanity, especially in the developing countries can be traced to lack of safe and potable water supply. Water should be easily accessible, adequate in quantity, free form contamination, safe and readily available throughout the year. There can be no state of positive health and well-being without adequate safe water supply.

Waster is not only a vital environmental factor to all forms of life, but it has a great role to play in socio-economic development of human population. In 1991, the World Health Assembly, in a resolution, emphasized that safe drinking water is a basic element of "primary health care" which is the key to the attainment of "Health of All by the year 2000 AD" (Park,2003).

Source of Water: The source of water requires professional advice. ln general, water must conform to two criteria; (a) Quality must be sufficient to meet the present and future requirement (b) the quality of water must be acceptable. The sources available for the development of water supplies are rain, surface water and underground water (Park, 2003).

Rain: Rain is the prime source of all water. Apart from the rain, water sink into the ground to form ground water. Rain water is the purest water in nature, physically; it is clear, bright and sparking. Chemically, it is very soft water containing only traces of dissolve solid 0.005percent; Bacteriological, rain water is free from pathogenic agents. Rain water becomes contaminated as it passes through the atmosphere, it picks dust, microorganism and gases such as carbon dioxide, nitrogen, oxygen and ammonia (Park, 2003).

Surface Water: Surface water originated from rain water. Surface water _is prone to contamination from human and animal source. As such it is never safe for human consumption. Surface water includes river, tanks, lakes, reservoir and sea water. The quality of surface water depends upon the characteristics of water shed, climate and the extent and the nature of man activity influence in the area. Pollution by man is the most significant factor in the suitability of surface water as a supply source. It is directly contaminated by human beings and animal or indirectly when rain-washes faeces and other pollutants from the banks into the stream and river. Surface water must therefore be purified before use (Ubah, Ajala & Liman, 2003).

Under-Ground Water: Under-ground water can be divided into subsoil or shallow and deep under-ground water. Under ground water include well, spring and boreholes.

Wells: These are shallow and deep well. The shallow well is collected above the first impermeable stratum and they are liable to pollution from surface water. Deep well is dawn below the first impermeable stratum, whether shallow or deep well, it should be protected in the following ways;

1) The well should be situated at least 100 feet from any source of pollution e.g. pit

latrine.

2) There should be water tight lining for at least 10 feet from the surface.

3) There should be parapet about 2 feet high surrounded by a concrete apron to drain the

waste water way.

4) There must be a water light cover.

5) Water should be drawn preferably by a pump or at least through a permanent bucket which is anchored to the well (Ubah, Ajala & Liman, 2003).

Disposal of Waste

Waste products are highly varied and have been described as any material no longer required by the owner. The quest by man to improve his living condition has led" to an increase in the amount of waste generated and the risk to health and environment has necessitated the need for proper handling of waste.

Waste product that consist of non-liquid waste material arising from domestic, trade, commercial, industrial, agricultural and mining activities and from public service are now internationally termed solid waste as against the old term “refuse”. Liquid waste material, which is of feacal origin are termed sewage (Ola, 1979).

The primary objectives of waste disposal system can be seen as follows:

Eliminate hazards to man such as physical e.g. broken bottles, empty can. Chemical e.g. Poisonous chemical, industrial waste and Biological E.g. Agent and Vectors of disease harbored in waste.

Prevent pollution of the natural environment, the dumping of waste on land and the indiscriminate disposal into rivers and other surface water or into the air can cause destruction of the natural life.

Management of Solid Waste

The growth of human population, couple with increased economic activities in towns and cities, result in high rate of solid waste generation. A fundamental attribute of solid wastes that it is inevitable as almost every human activity involves the generation in solid, liquid and gaseous form. Social dynamics such as modernization and economic development influences waste generation. The management of solid waste is far from being satisfactory in Nigeria. Many parts of our cities and towns do not benefit from any organize waste management service and therefore waste are unattended to. They are buried, burnt or disposed haphazardly. In areas where the authorities do the collection, it is often irregular and sporadic. Recycling of waste is negligible while the method used for collection, transportation and final disposal, are very unsatisfactory. Waste, when less unattended for a long time, constitute serious health hazard, caused offensive odor, pollutes underground water source and decreases environmental quality (FME, 2005).

The process of solid waste management includes storage, collection, transportation and disposal.

Storage: This involves provision of a sufficient number of containers to hold the volume of solid waste produced between collections; the selection of an approved type of container; the placement where they will provide maximum convenience for

the users and access to the collection and the maintenance of the container. A study on solid waste generation in some major Nigerian cities done in 1982 showed a close correlation with the population of the cities. In another study done in Lagos metropolis on solid waste disposal in l974, it shown that of the 97.2% of the respondent that uses storage container, only 47% had storage container with cover (David, 1975).

Ideally the storage container should be watertight and provide with a tight-fitting lid. It should be rust resistant, structurally sound and easily fitted, emptied and cleaned.

Collection and Transportation: Refuse collection is the process of transferring solid waste from the storage receptacle to the place of disposal. The method of disposal depends on funds available. House-to-House collection is by far the best method of collecting refuse. In Nigeria today, there is no House-to-House collection system. People are expected to dump the refuse in the nearest public bin, which is usually not done (Ola, 1979).

Where a community has no collection and transportation service, condition is generally favorable to high harmful insects. Even where service is available a careless collection employee may spill solid waste on the premises or street. Collection of solid waste should be frequent, systematic and government should maintain bin points or municipal cleansing serviced.

Method of Solid Waste Disposal

There is no single method of refuse disposal, which is equally suitable in all circumstance. The choice of particular method is governed by some factors such as cost and availability of land and labor. The principal methods of refuse disposal are:

Composting

Burial

Incineration

Control tipping or sanitary landfill (WHO, 1977).

Composting:

Composting is a method of combine disposal of refuse and night soil or sludge. It is process of nature whereby organic matter breaks down under bacterial action resulting in the formation of relatively stable humus-like material, called the compost which has considerable manorial value for the soil. The principal by-products are carbon dioxide, water and heat. The heat produced during composting - 600C or higher, over a period of several days, destroys egg and larvae of flies, weed seed and pathogenic agent. The end product compost, contain few or no disease producing organism, and is a good soil builder containing small amount of the major plant nutrient such as nitrate and phosphates (WHO, 1966).

Burial This method is suitable for small camps. A trench 1.5m wide and 2m deep excavated, and at the end of each day the refuse is covered with 20 to 30cm of earth. When the level in the trench is 40cm from ground level, the trench is filled with earth and compacted, and anew trench is dug out. The content may be taken out after 4 to 6 months and used on the field.

If the trench is 1m in length for every 200 persons, it will be filled in about one week (Assar,1971).

Incineration

Refuse can be disposed hygienically by burning or incineration. It is the method of choice where suitable land is not available. Hospital refuse, which is particularly dangerous, is best disposed of by incineration. Incineration is practiced in several of the industrialized countries, particularly in large cities due to lack of suitable land (Park, 2003).

Incineration is the burning of waste. It could be done in furnace boiler or container specially designed for that purpose with the principal end product being ashes and gases. The newer incineration plants have reduced atmospheric

pollution and by this method the volume of material for ultimate disposal is greatly reduced (Ubah, Ajala & Liman, 2003).

Control Tipping or Sanitary Land Fill

Control tipping or sanitary landfill is the most satisfactory method of refuse disposal where suitable land is available. It differs from ordinary dumping in that, the material is placed in a trench or other prepared area, adequately compacted and covered with earth at the end of the working day (Ehler, 1965). Three methods are used in this operation, the trench method, the ramp method and the area method.

The trench method; a long trench is dug out 2 to 3m (6-10ft) deep and 4 to l2m, (12-36ft) wide, depending upon local condition. The refuse is compacted and covered with excavated earth. It is estimated that one acre of land per year will be required for 10,000populations. The ramp method, this method is well suited where the terrain is moderately sloping some excavation is done to secure the covering material. The area method; the refuse is deposited, packed and consolidated in uniform layer up to 2 to 2.5m (6-8ft) deep. Each layer is sealed on its exposed surfaced with a mud cover at least 30cm (12 inches) thick. Such sealing prevent infestation by flies and rodent and suppresses the nuisance of smell and dust (WHO, 1969).

Management of Liquid Waste

Human excreta are a source of infection. it is an important cause of environmental pollution. Every community has a responsibility for its safe removal and disposal so that it does not constitute a threat to public health. The health hazards of public health are; soil pollution, water pollution, contamination of food and propagation of flies. The resulting disease is typhoid, paratyphoid, fever, dysentery, diarrhea, cholera, and hook worm disease, ascariasis and other intestinal infection and parasitic infestation (Park, 2003).

Collection and disposal community liquid waste can pose serious health problems unless something is done. Sewerage facilities are ideal for such purpose but are not easily attainable in many developing countries including Nigeria. Where neither water nor sewerage exist, the communities face danger from unprotected water source and in sanitary liquid wasted. Where water supplies are available, the problem of insanitation is intensified by the increased quantity of liquid waste. The out-break of cholera and other related disease in Nigeria can only be checked if special attention is paid to the collection and disposal of liquid wasted (Ola, 1979).

Pit Latrine: This is a common of sewage disposal in many urban and rural communities in Nigeria. it can be built anywhere without special tool and the family members themselves can construct the latrine with guidance from the public latrine authorities.

Unfortunately, this is no done in many cases here in Nigeria (Ubah Ajala & Liman, 2003).

Aqua Privy: It is a water carriage system and can be used for large population as well as inland logged arena. The life span is about 10-15 years. It is expensive to construct and it is not recommended for individual family use because of cost, (Ubah, Ajala & Liman, 2003).

Flush Latrine: It can either be hand flush or pure flush type, squat plate mounted over a borehole or pit. They are quite suitable for household use and are common method of sewage disposal in many urban communities in Nigeria. The shortage of water is a major factor that militates against the maintenance of a good sanitary condition with this method of sewage disposal (Ubah, Ajala & Liman 2003).

Borehole Latrine: A borehole latrine is a hole (20-30cm diameter) bored into the ground with an earth auger, with a squatting slab on top. The latrine

is clean and excrement is completely out of view and inaccessible to flies (Ubah, Ajala & Liman 2003).

Septic Tank Latrine: The septic tank latrine is a very satisfactory type if the house owner can afford the extra cost and if adequate pipe water is available which usually not the case here in Nigeria. The septic tank used by a family and has a life span of 5 years, the septic tank that is been provided in aeroplane and train is referred to as chemical toilet". It contains caustic soda. As one defecates there is decomposition and when it stops, it opened then passed into the sewer (Ola, 1979).

Housing and Ventilation

"Housing", in modern concept, includes not only the physical structure, providing shelter, but also the immediate surroundings, and the related community service and facilities. It has become part of the concept of "human settlement" which is defined as "all places in which a group of people reside and pursue their life goal; the size of the settlement may vary from single to millions of people" (UN, 1977).

A WHO expert group of 1961 on public health aspect of housing prefer to use the term "residential environment" which is define as the physical structure that man uses on the environs of the structure including all necessary service facilities, equipment and device needed or desire for the physical, mental and social wellbeing of the family. The immediate surroundings of residential building are often referred to as the neighborhoods (Park, 2003).

The house is that part of man's total environment in which the greatest degree of family life is spent. The family is the basic group of society and public health is closely related to the health of the individual families. House wives, infants, preschool children and the aged stay at home for a greater part of the day. Approximately one third of a life time is spent sleeping in the home. The social adaptation is reflected and therefore a god index of environmental adequacy and adjustment (Feller, 2000).

There is considerable agreement in the literature on the basic aspect of good housing namely;

Physical aspect i.e. site, dry, free from flood, easy access to sunlight and prevailing wind, far from industrial area and far from breeding place of insect.

Construct, safe, devoid from accident traps including electricity and special safe guard foraged and young must suit the climate and proper drainage of sewage water.

Physiological aspect: i.e. provision of adequate ventilation, adequate protection against noise and sufficient provision of natural and artificial lighting.

Sanitary aspect: sufficient, cheap and safe water supply, safe disposal of refuse and sewage.

Psychological aspect: it is primary working environment of the house wife, it is should have sufficient facilities for good housekeeping, adequate facilities for washing and cleaning, the kitchen should be designed in a manner that food preparation can be sufficient and that smoke and smell are not allowed to pervade the house. There should be sufficient storage capacity in the house sleep requires quietness the noise factor should be made as small as possible. There should also be a place for homework (Fielder, 2000).

Good housing should eliminate or minimize the following hazard:

Biological: the risk of communicable disease, good water supply, adequate facilities for washing utensils.

Physical: injury from falls, burns, electric shock, and poising, atmospheric pollution from smoke, fire noise and poor lighting.

Social, the home should be designed so that family can function effectively in terms of its cultural background. This implies privacy for adults and a suitable setting for bringing up children.

The modern concept of ventilation implies not only the replacement of vitiated air by supply of fresh odour air, but also control the quality of incoming air regards to its temperature, humidity and purity with a view to provide a thermal environment that is comfortable and free from risk of infection.

Types of Ventilation

Natural ventilation is the simplest system of ventilation of small dwellings, school and offices. In this method, reliance is placed on certain forces, which operate in nature. These are wind, diffusion and inequality of temperature. (Gorodischer 1970). The chief drawback of natural ventilation is that it is not possible to regulate the velocity of the incoming air nor to adjust its temperature or humidity, (Gorodischewr 1970).

Mechanical Ventilation

Mechanical or artificial ventilation is of the following type:

Exhaust ventilation

Plenum ventilation

Balance ventilation and

Air conditioning.

Exhaust: In this system, air is extracted or exhausted to the outside by exhaust fan; a vacuum is created which induces fresh air to enter the room though windows, doors and other inlets. These are generally provided in large hall and auditoria for removal of vitiated air. The exhaust fan is housed in apertures in the external wall, high up near the roof. The ventilation may be regulated by adjusting the speed of the fan.

Plenum Ventilation: In this system, fresh air is blown into the room by centrifugal fans so as to create positive pressure, and displace the vitiated air. Plenum or propulsion system is used for supplying air-to-air conditioned building and factories. Air is delivered through ducts at desire points (Park, 2003).

Balance Ventilation: is a combination of the exhaust and plenum system of ventilation. The blowing fan must balance the exhaust fan. When this system is employed the natural system ventilation is entirely dispensed (Park, 2003).

Air Conditioning: is a defined as “the simultaneous control of all, or at least the first three of those factors affecting both the physical and chemical condition of the atmosphere within any structure. These factors include temperature, humidity air movement, distribution, dust, bacteria, odor and toxic gases, most of which affect, in greater or lesser degree, of human health or comfort (Park, 2003).

Air and Noise Pollution

The immediate environment of man consists of air on which depend on all forms of life. Apart from supplying the life-giving oxygen, air and atmospheric condition serve several functions. The human body is cooled by the air contact; the special senses of hearing and-small function through air transmitted stimuli; disease agent may be conveyed by air.

Pollution of air by dust, smoke, toxic gases and chemical vapor has resulted into sickness and death. Man adventure into outer space has broadened our concept of air environment. Human beings need a continuous supply of air to exist. The requirement for air is relatively constant (Zutsi, 1970).

Air mechanical mixture of gases. The normal composition of external air by volume is approximately as follows. Nitrogen 789.1 percent; oxygen l0-O3 percent; carbon dioxide 0.03percent. The balance is made up of other gases air contains water vapour, traces of ammonia and suspended

matter such as dust, bacteria and spores (Park, 2003).

Air is rendered impure by, respiration of man and animal, combustion of coal, gas and oil, decomposition of organic matter and plant used (WHO, 1987).

Effect of Air Pollution

About 1.3 billion urban residents worldwide are exposed to air pollution level above recommended limit. Air quality in the developed countries has generally improve in the past two decades, but in many developing countries air quality has deteriorated because of rising industrial activity, increasing power generation and the congestion of street with poorly maintained motor vehicles that use leaded fuel (Park, 2003).

Air pollution occurs in different forms everywhere and it is caused by various factors. Mostly due to human activity. (Fallon Jr, 2003). The health risk of air pollution in our environment in our homes, schools, workplaces cannot be easily being quantified. A major concern in recent time has been the magnitude of the problem and health impact of indoor air pollution. However, analysis shows that most of the respiratory problems and some form of cancer are as a result of air pollution (WHO, 2003) which affect segment of our Society children and women.

Noise is defined as "unwanted sound" but this definition is subjective because of the fact that one means sound is another man's noise. Perhaps a better definition of noise is "wrong sound, in the wrong place, at the wrong time" (WHO, 1966). Man is living in an increasingly noisy environment. The 20-century is described as the "century of noise". Noise has become a very important stress factor.

The effect of noise, the most serious pathological effect is deafness or hearing loss. The victim is generally unaware of it in early stages. The hearing loss may be temporary or permanent. Temporary hearing loss result from a specific exposure to noise. Noise temporary hearing loss occurs, in frequency range between 4,000 to 6,000HZ. Repeated or continuous exposure to noise around 100 decibels may result in a permanent loss; in this, the inner ear damage may vary from minor changes in the hair cell ending to complete destruction on the organ or coati.

A number of temporary physiological changes occur in the human body as a result of noise exposure. These are rise in blood pressure and arise in intracranial pressure, an increase in heart rate, breathing and increase in sweating (Noise Advisory Council, 1971).

Food Hygiene

Food hygiene is defined as (Brown sell, Griffith and Jones, i985) as the sanitary science which aims to produce food which is safe for consumers and of good keeping quality. Contamination of foodstuffs occurs at all stages of their production that is collection, preparation, manufacture, transportation, storage and sale.

Sometimes, despite all precautions, organism may contaminate food, in this instance adequate refrigeration may prevent multiplication of the organisms to a level sufficient to cause clinical symptoms. Common organisms casing food poisoning in our environment includes Vibrio cholera and salmonellatyphi (Brownsell, Griffith and Jones 19845).

The measure to be taken to maintain high standard of catering at home and effective food sanitation programmes in the community at large will include:

Control of primary source of food by food sanitary inspectors.

Inspection of relevant premises e.g. restaurant and hotels and abattoir.

Supervision of food handlers in term of surveillance which can either be, medical and laboratory

examination of person.

Training in personal hygiene and sale food handling techniques.

Health Education: This is necessary component of successful enforcement or technological improvement programmer.

Legislation: The implementation of an enforcement programme.

Knowledge, Attitude And Practice To Sanitation

Knowledge

The dimension of knowledge deals with peoples basic understanding of what constitute hygiene or unhygienic behavior, environmental cleanliness, wholesome or good quality water/food well as the relationship between health and sanitation. ln other words, do people have the basic information to enable them understand, analyze and arrive at rational conclusion about the nature, risk and consequence of their behavior? (Nkom and Essien,2002).

To understand how people, participate in health maintenance, comprehensive information is need on how people think and act in relation to health, including details of their beliefs, attitude, knowledge and awareness of health matters (Adesina, 1990). It has been suggested that the individual strives to maintain a healthy balance and an equilibrium achievement by reducing health risk and improving health resources, including health potentials. (Suleiman and Adamaja, 2005).

Recently, there has been considerable interest by researcher (WHO, 1993; James1990; Shipley, 1994) on how to control the various environmental factors in order to improve the health of the adolescent. According to (WHO, 1997), the major cause of death among adolescents in Africa is extremal cause and that the increasing prevalence of unhealthy lifestyle is a worrying sign since it is likely to result in higher mortality in a country like Nigeria where there is rapid increase in population there is the need to examine the influence of the environment on the people health. Very little attention has been given to our environment in the past. The result is that air is polluted, water bodies are contaminated creating unhealthy living condition for millions of people. Lands and forest are damage progressively due to acid rain, fertilizer, pesticide and herbicides are used indiscriminately and when we add to that various emission of greenhouse gases from industrial sources, what we have is a sad scenario of global change. However, environmental awareness worldwide, especially in "last few years, has begun to be established as more and more people have begun to see the need to control pollution, conserve natural resources and protect biological diversity (Okuofo, 2002).

Attitude

Environmental cleanliness and personal hygiene require certain underlying changes in people's behavior. Changing the behavior of people unfortunately is as difficult as it is desirable. This is because such behavior is often embedded in a people's culture and way of life.

The habits, attitude and customs, which guide this behavior are so deeply entrenched in people's way of doing things that they are almost taken for granted changing them amount to a fundamental assault on people familiar way of doing things. It is, therefore, not surprising that such change is often resisted. Thus, attitude involves their perceptions, predisposition, feelings and orientation towards sanitation and hygiene. Do the people see environmental cleanliness, personal hygiene, wholesome water and food as desirable, necessary, proper and worth making sacrifices for? And unsanitary behavior, unhygienic practices discouraged or even punished (Nkom and Essien,

2002).

Some of man's behaviour and attitude affect the environment in different ways sometimes the activities are a simple as splitting on the ground urinating and defecating inappropriate places, bush burning, smoking, noise production can cause environmental problems. Deforestation for the purpose of farming can lead to erosion problem while the use of agro-chemical and fertilizer are decidedly not environment friendly. The use of acrosalsprays (perfumes and insecticide) has deleterious effect on the ozone layer because the propellant in the sprays is ozone hostile. Many more examples abound of how the simple apparently innocent but mostly ignorant activities of man affect the environment (Okuofu,2002).

Practice to Sanitation

Lifestyle has been proposed as a bridge between individual and his immediate environment. Reference is then made to healthy and unhealthy lifestyle. An analysis is needed of why people adopt unhealthy behavior as a reaction of pressure in their daily lives (Lazarus, I994). The adolescent adopts a healthy life style by avoiding the risk of breakdown and illness with the help of various health potential variables. They can also be pre-disposed to unhealthy lifestyle when short term reaction to stress such as alcohol and drug abuse smoking or risk taking become long term firmly established pattern of behavior (WHO,1981).

Better health, a longer life with less sickness is crucial to a better standard of living yet worsening environment condition in many areas threaten to reserve gain in 'public health over the last several decades (WHO, 1993).

In Nigeria, there is hardly any properly articulated waste management programme yet we continually produce waste (liquid and solid) in our homes what do we do with the waste? We dump them indiscriminately in open spaces where they become eyesores. There is no easy way of estimating the economic value of aesthetics and so the damage of indiscriminate dumping of waste is inestimable. The heaps of waste we accumulate affect land use reduces the value of such dump-sites and adjacent propriety (Okuofu, 2002).

It would appear that man's activities are pushing the world toward doomsday and that our environment would collapse imminently. Not really fortunately, nature itself has self-regulatory mechanism with which it purges the environment of most of those problems. However, because of increase urbanization, population growth and development, man is placing a sing stress of nature's capacity to cleanse the environment (Okuofu, 2002).

If man activities can be reordered such that the volume of waste and other residues are substantially reduced and more attention is given to environmental friendly activities, the catastrophe can be averted. To do this, man must change his view about "waste". Organic matter can be converted to manure and the dependence on chemical, fertilizer, as a farming input would reduce considerably (Okuofu, 2002).

The socio-economic activities of men which lead to water contamination include industries, agriculture, urbanization, mineral exploration and transportation. In Kaduna, the textile industries discharge a variety of chemical including caustic dyes, toxic organic and heavy metals while the breweries and soft drink plants discharge waste from grains, yeast and caustic dyes. The Automobile plant waste contain metal particularly lead. The plastic, pulp and paper industries are major source of mercury and lead. Lagos, the most industrialized city in the nation, its Lagoon and other water ways are heavily polluted with industrial effluents and human wastes. Other cities like Port Harcourt and Kano have industrial plants which similarly pollute

the aquatic environment. The greatest source of industrial pollution of water in Nigeria are perhaps the oil industries, refineries produce wastes containing oil grease, heavy metal and other residues and chemical use in petroleum refining (Adaudi and Salawu,2002).

Environmental factors play very important roles in the safety and wholesomeness of food. The environment in which foods are exposed, especially the ready-to-consumer foods, determines to some extent, the safety of the food and invariably the health of the consumer. Microbiological contamination of food is responsible for over 90% episodes of food borne illness including typhoid fever, cholera and diarrheal disease (Winnoma, 1992). To incriminate the food as the total offender without taking into consideration the poor hygienic practices associated with its handling often places unwarranted and exclusive blame on the food (Brandy, Migaki and Tayor, 1988).

When foods are kept and/or handled in hygienically poor and unsanitary environment, levels of microbial contamination should naturally be expected to be high. This poor environmental state can be created through the sick individual handling food, the raw materials with which the food are prepared, the implements and utensils used for food preparation and services like knives, spoons, among many other source (Oka, 2000) in(Okolacha, Umoh and Raji, 2002).

Policy Guideline On Environmental Sanitation

A National Policy on environmental sanitation is not only expedient but compelling for Nigerians to ensure judicious management of her abundant and diverse sources and foster good health and well-being of the teeming population.

The current democratic dispensation is therefore, fired towards ensuring improved environmental sanitation in line with contemporary, political and economic reliabilities as enunciated in the National Economic Empowerment and Development Strategy (NEEDS)document. The policy is also in compliance with set international obligation and commitment as contained in the Millennium Development Goals (MDG), World Summit on Sustainable Development (WSSD) targets and the New Partnership for African Development (NEPAD)initiatives. This is aimed at increasing National productivity and foster Economic Development through improved Environmental Sanitation practices (F RN, 2005).

However, past effort have been ad-hoc and coordinated. The failure of past effort could be attributed mainly to poor environmental sanitation, education and awareness, low literacy level, non-responsive governance over the years, in discipline and disregard for the rule of law. Absence of a clear - cut policy on environmental sanitation is responsible for overleap of function at different levels of Government and appropriate institutional arrangement.

Policy guidelines are made on pest and vector control, market and Abattoir sanitation, solid waste management, sanitary inspection of premises and school sanitation with the aim stated as follows:

To control pest and vectors in the environment that constitutes threats to public health and property. (Policy guidelines on pest and vector control Jan, 2005).

To protect the health of all Nigerians by ensuring the highest standards of sanitation within and in the surrounding of all market and abattoirs throughout the country. (Policy guidelines on market and Abattoir sanitation, Jan 2005).

To improve and safeguard public health and welfare through efficient sanitary solid waste management methods that will be economically, sustainable and guarantee sound environmental quality. (Policy Guidelines on Solid Waste

Management, 2005).

Improve the quality of life of Nigerians through sustained sanitation practice in homes and communities. (Policy Guidelines Sanitary Inspection of Premises, Jan, 2005) and;

To provide an optimal sanitary environment which is safe and conducive for physical, mental and emotional health of the school community in order for the child to achieve maximum benefit from educational programme? (Policy guidelines on school sanitation, Jan 2005).

The Environmental sanitation policy and policy guidelines have been developed to achieve sustainable promotion and protect environmental and human health in Nigeria.

CONCLUSION

The findings from the statistical analysis of the data collected for the study led to the following conclusion;

The people have adequate knowledge of sanitation.

The attitude of the people towards sanitation is positive.

The peoples' practice of sanitation is adequate.

In general, the people of Kaduna Towns of Kaduna state have adequate knowledge, positive attitude and practice of environmental sanitation.

General improvement of sewage waste disposal facilities by individual, family and community as well as government agencies who are stakeholders in public health.

Government/community should make provision of adequate and safe water to the people of Kaduna Towns of Kaduna state.

Government should assist the health inspectors who are responsible for instructing and inspecting the community by ensuring that environment sanitation laws are being enforced.

Based on this study, extensive research covering illiterates to find out the relationship between knowledge attitude and practice of sanitation among them in Kaduna Towns of Kaduna state and elsewhere in Nigeria should be carried out.

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