**RESEARCH PAPER FOR WASH CERTIFICATE.**

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**ABSTRACT:**

Many South Sudanese communities are faced with issues of solid waste disposal and health risks that undermine efforts towards ensuring a clean environment and good health for all. This research focuses on solid waste disposal and health issues among resident in Yei River State community.

Questionnaires, observation and unstructured interview guide were the methods used for data collection using a sample size of 20 respondents. The shared experiences from residents or respondents showed that issues of improper solid waste disposal have posed thread to the health of residents.

The cross tabulation on disease contraction and distance of final disposal sites from the houses shows that residents living closer to open dumping sites have contracted related diseases such as malaria, skin infections among others as result of improper refuse disposal.

The environmental health and health department, and residents in the community are concerned and hoping for a lasting strategy would be found to ensure a clean environment and good health for all. As result it was recommended that, there should be proper siting of final disposal sites to avoid pest and diseases proliferation, provision of more refuse containers and household waste bins for residents among others.

**INTRODUCTION:**

The growth of the world population, increasing urbanisation, rising standards of living, and rapid development all contributed to an increase in both the amount and the variety of solid waste generated by industrial, and domestic activities.

Many industrialised European countries like Britain, France, Spain, Ireland and Italy were being class constituting the nucleus of the dirtiest countries in Europe, drowning in a sea of garbage and with most of the dumped in landfill sites.

A World Bank report on the state of solid waste around the world estimates that Municipal solid waste will rise from the current 1.3 Billion tonnes per year to 2.2 Billion tonnes per year of the increase coming from rapidly growing cities in the developing countries. Low income countries are also experiences millions tonnes of solid waste a day with the population rising to 676 million by 2025. The report further states Municipal challenges are going to be enormous or even greater than the challenges we are facing with climate change.

Solid waste in Africa contains food waste (biodegradable/compostable), sand, gravel, papers, plastic, metals (example Aluminium). The last four components are recoverable, reusable and recyclable. Plastic is a major nuisance in Municipal solid waste degrades the environment, clogs drains and causes flooding in the rainy season.

Waste is typically disposed of consideration for environmental and human health impacts, leading to its accumulation in cities, towns. Waste handlers and waste pickers are especially vulnerable and may also become vectors, contracting and diseases when human or animal excreta or medical waste are in the waste stream. Improperly disposed solid unattended to, can contaminate ground and surface water and also create greenhouse gas emissions and others.

Garbage is often burned in residential areas to reduce volume and un cover metals. Burning creates thick smoke carbon monoxide, soot and nitrogen oxides, all of which are hazardous to human health and degrade urban air. Uncollected wastes often clog drains and causes stagnation of water, the breeding of mosquitoes or the contamination bodies from which the population normally takes water for consumption, cooking and cleaning.

In tropical countries temperatures and humid conditions accelerates degradation, increase the amount of leachate and directly affects the ecosystems by penetrating the soil and contaminating ground water. The affluent lifestyle brought about by industrial development aggravates the problems of improper solid waste disposal on health. While solid waste issues are uncoordinated disposal and its consequence if overlooked however can wreck the health and existence of any people. Uncollected solid waste blocks drains and causes flooding and spread of water borne diseases that are not properly disposed of, especially excreta and other refuse from house hold and the community are hazard and which can lead to the spread of infectious diseases. Unattended waste lying around attracts flies, and creatures that in turn spread diseases.

UN-Habitant show that diarrhoea and acute respiratory infections are significantly higher for children living in households where solid waste is dumped, or burned in the yard, compared to households in the same cities that receive a regular waste collection service.

Improper solid waste disposal activities have diverse effects ranging from health, environment, and human life and property as different researchers espouse on the consequences of improper municipal solid waste. Rotten organic materials pose great public health risks, including serving as breeding grounds for disease vectors. Improper solid waste disposal leads to substantial negative environmental impacts ( for example, pollution of air, soil and water, and generation of greenhouse gases from landfills), and health and safety problems such as diseases spread by insects and rodents attracted by garbage heaps, and diseases associated with different forms of pollution.

Solid waste disposal in Yei River State is a complex issue that has been a major feature on the priority of successive municipal chief executives and county Commissioners, public health officer and the department of health. Generally, existing facilities including sanitary facility are inadequate to serve the people, the ever increasing volumes of solid waste generated in Yei Municipality is overwhelming. Problems are encountered at all levels of waste management such as poor network, different settlement structures making collection in some areas difficult, increasing waste quantities due to urbanisation, inadequate and obsolete waste collection equipment. The situation creates a suitable environment for the breeding of disease vectors such as mosquitoes, flies, cockroaches and mice.

In view of this, some of the inhabitants dispose of rubbish indiscriminately such as drainage channels, and recent advent of polythene bags have even worsen the situation for waste management groups as they are seen everywhere in the town. Solid waste in Yei Municipality consist mainly of garbage generated from household food waste, plastics and containers, animal excreta and human excreta from open defecation.

The community solid waste generated come in forms of degradable and non-degradable and tends to be improperly discarded in the environment. It is against this background that this study seeks to verify this challenges and its implication for the health of residents in Yei Municipality of Yei River State.

**Overview of study area.**

Yei Municipality in Yei River State is located in former Central Equatorial State of the Republic of South Sudan. It’s in the south of Juba city and bordered by Congo, and Uganda.

Yei Municipality is mainly a residential area which houses people from different religious backgrounds and ethnicity that comprises of 64 tribes of South Sudan and foreigners from Ethiopia, Somalia, Kenya, Eritrea and Uganda.

Yei Municipality drives it name from Yei River which is the main water body weaving through Yei Town. Yei River is chocked with solid waste materials. There are also water streams running into Yei River where indiscriminate solid waste disposal poses a threat to residents in Yei Municipality such as malaria, diarrhoea and other infections.

Ensuring clean environment for many residents in Yei community is synonymous to preventing environmental health related problems. On the contrary poor solid waste disposal in the community is adversely contributing to the health problems in Yei community. Some of these associated poor refuse disposal health problems includes malaria, typhoid fever, cholera, flies, bad odour, skin infections among others.

According to Yei Municipal profile, directly related to good health, survival, growth and development are potable drinking water, improve sanitation and good health hygiene. Delivery of these basic services of life has not been without challenges. Thus, access to these services has been a luxury in developing countries.

With regards to sanitation, the major problem facing the municipality is poor communal refuse sites for managing solid waste materials, which is the area lack properly constructed communal refuse site. This has resulted in indiscriminate disposal of refuse in Yei community. Other residents patronise the house to house refuse collection system. Operation of this system has not been without dissatisfaction from residents. Outstanding setback identified about this system of solid waste management is irregular emptying of household bins. Thus, these refuse bins will over flow and stay outside for many days before emptying it, this situation could lead to health problems such as mosquitoes, bad odour and other infections.

**Objectives of the study.**

The study is to access the awareness level of residents on the dangers of solid waste disposal and diseases contraction on their health is an important factor in considering issues related to solid waste disposal and health. This is because in some cases it is argued that residents engaged in indiscriminate dumping acts because they are not aware of the adverse effects on their health. For instance, the Municipal Health Director asserted in a radio talk show that residents having no knowledge on the dangers associated with poor disposal of refuse as one of the constraints in tackling solid waste disposal and health problems in the community. As a result, it was observed on the field that almost all the residents in Yei community were aware of the dangers associated with improper refuse disposal on their health. Despite their awareness, it was found that majority of the residents have contracted diseases associated with improper solid waste disposal especially malaria, typhoid, diarrhoea, cholera and skin infections.

Consequently, diarrhoea prevalence was at 81.3% of the population in South Sudan, with over 30 % of the mothers reporting incidence of the disease among their infant children. The same study indicated that mothers have very low awareness of highly infective nature of infant and young child faeces and the acute health risks that poor hygiene practices presents due to solid waste disposal. Diarrhoea ranks second to malaria at 90% of the study population. South Sudan is one of the four countries globally still struggling with eradication of Guinea worm.

**Literature review**

This report investigate the effects of solid waste disposal on the health of residents and the environmental health risks and solutions how to reduce the impact of solid waste disposal.

Considering that, most residents in the community were observed to be involved in the act of disposing solid waste at open dumping sites within the community such as building sites, along Yei River and unauthorised places, have endanger health risks among not only residents but also environment.

The effects of solid waste indicate that residents in the community were concerned with the unpleasant odour, spread of mosquito breeding ground and the tendency of causing pest and diseases in the community.

Improper solid waste disposal leads to substantial negative environmental impact such as pollution of air, soil and water, and generation of greenhouse gases from landfills, and health and safety problems such as diseases spread by insects and rodents attracted by garbage heaps, and diseases associated with different forms of pollution.

Open dumping and burning of domestic and industrial waste is a common phenomenon in many developing countries. This often takes place at waste disposal sites and can be the result of spontaneous combustion or deliberate attempts to reduce waste volume. The open burning of waste leads to toxic releases to both ground water and air. These contribute to lasting damage to the environment and have serious implications for the health of local people and livestock. There is a strong movement in many countries to reduce the volume of waste dumped. The increase of composting sites is an indication that organic fraction of garbage can be converted into a useful and commercial product with a higher value. For inert materials, technologies are needed to use waste as raw materials to produce new products.

Development of new materials from recycled material will also encourage sorting of solid waste. Zero waste movement also targets industries and waste exchange, 40% of landfilled wastes in most of the countries come from building materials and this suggests that such wastes can be avoided by developing long lasting materials and dwellings to reduce wastes from need to rebuild. Other alternatives and efforts are

* Onsite treatment and utilization will reduce need for transport.
* Waste minimization is a socially desirable goal.
* Subsidy on products generated from recycled materials will encourage socio-economic changes.
* Centers with technologies that use collected waste materials are needed.
* Wastes that have severe risks and excessive problems in disposal should be identified and those which cannot be neutralised may need to be restricted at the point of creation or entry.
* A database on waste that are available will provide information to possible users of waste.

The long decades of war have seen a decline in sanitation services, and current capacities require substantial strengthening. Emerging urban centres may soon require sewerage networks in the states will start to put in place a mechanism for operating de-sludge facilities or equipment for emptying septic tanks and solid waste disposal.

Overall level of access to appropriate sanitary facilities is estimated to be 14.6% in towns and much lower in remote rural areas. In reality, most of these facilities are in very poor condition due to lack of maintenance. The general level of hygiene awareness and diseases vector is very low. The incidence of waterborne and hygiene-deficiency diseases is widespread. Solid waste disposal achievements are still very modest in South Sudan as there was previously not enough emphasis placed on it, largely due to long period of civil war.

Concepts such as Community Led Total Sanitation (CLTS) and provision of more refuse containers and household waste bins for residents need to be promoted alongside incremental improvements in latrine design which are commensurate with household affordability. The focus will continue to be on household, environmental and institutional sanitation such as in places including schools, health facilities, market and bus parks, provision of products and services for household waste bins and equipment for sewage removal and disposal.

**Conclusion.**

The shared experiences from the residents showed that, issues of improper solid waste disposal have posed threat to the health of residents. The Environmental Health and Health department, and residents in the community are concerned and hoping a lasting strategy would be found to ensure a clean environment and good health for all.

The cross tabulation on diseases contraction and distance of final disposal sites from houses showed that residents living closer to open dump sites have contracted diseases such as malaria, skin infections among others as result of improper refuse disposal.

It is therefore recommended that final disposal sites for solid waste should be sited outside residential area, especially the open dumpsites to avoid proliferation pest and diseases. It is further recommended that residents in the areas should insist on using mosquito nets to avoid being biting by mosquitoes.

The Yei Municipal, Ministry of Health and Environment should provide health education to the people on how to live in good health. Significantly, if the recommendations of this study are considered and implemented, there is a high tendency of improving the solid waste disposal situation and health risks among residents in Yei River State to have a clean environment.

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