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AN SOCIOLOGICAL REVIEW

LUME 5 NO. 1, JUNE, 2019

LIST OF ARTICLES

ARTICLES	PAGE
D DIVERGENCE: AN ANALYSIS ON UNCONVICTED INMATES AND CORRECTIONAL CENTRE PRACTICES IN KANO	1-18
C FACTORS INFLUENCING RISKY SEXUAL YOUTHS IN ILORIN METROPOLIS	19-30
ANALYSIS OF QUALITATIVE DATA IN SOCIAL	31-38
wen Igiebor & Iyase Ambrose Osariyekemwen	39-48
THE RESOLUTION (ADR) AS A CONFLICT MANAGEMENT: AN EXAMINATION OF THE FORMS, PROBLEMS IN NIGERIA	49-59
HE PLIGHT OF WOMEN IN INTERNALLY DISPLACED PERSONS IN NIGERIA	60-77
Ajayi, O. A. & Fawole, O. A. (Ph.D.)	78-87
VERNMENT AND NATIONAL DEVELOPMENT	88-101
PhD & Augustine Eleke	102-111
INVESTIGATION OF UNDERGRADUATE STUDENTS' PERCEPTIONS OF UNIVERSITY, AGO-OLABI ONABANJO UNIVERSITY, AGO-OLABI	
Yewande & ADENUGA, Ademolu Oluwaseun	
FLATION OF CAPITAL BY THE NIGERIAN GOVERNMENT: A CRITICAL ANALYSIS	
PLICATION FOR SOCIO - ECONOMIC DEVELOPMENT IN NIGERIA	
HE FOURTH REPUBLIC	
ariyekemwen & Iyase Ambrose Osariyekemwen	
E PREVALENCE OF INTIMATE PARTNER VIOLENCE IN NIGERIA	
WORK INTERVENTION PERSPECTIVE	
Isaiah & Owie Ukponahusi	

PERCEIVED EFFECTS OF POOR SANITATION ON HEALTH OF UNDERGRADUATE STUDENTS IN HALL OF RESIDENTS, UNIVERSITY OF ILORIN
Abdulbaqi, S. Z.; Tejideen, T. O. & Isiaq, A. T. 112-122

VOLUME 5 NO. 2, DECEMBER, 2019

COMBATING THE SCOURGE OF HUMAN TRAFFICKING IN EDO STATE: THE ROLE OF PARENTS IN DISCOURSE	124-136
Ernest Osas Ugiagbe, Ph.D. & Uyi Benjamin Edegebe	
MANAGEMENT OF INDUSTRIAL CRISES IN NIGERIA: A THEORETICAL APPROACH	137-149
Dr. Akor Sunday Joseph & Dr. Adegbola Adetayo Jacob	
DEMOCRACY AND POLITICAL PARTICIPATION IN NIGERIA: A STUDY OF THE 2015 PRESIDENTIAL ELECTION IN LAGOS STATE, NIGERIA	150-166
Francis Osadebamwen OSAYI & Patience Amaka OMAMOR	
THE NEED FOR WOMEN'S PARTICIPATION IN PEACE BUILDING IN NIGERIA	167-177
Adekeye, D.S. (Ph.D.)	
AN EVALUATION OF THE SOCIAL WELFARE SERVICES IN OKO PRISONS, BENIN CITY EDO STATE, NIGERIA	178-191
Ernest Osas Ugiagbe, PhD & Tracy Edosa Ehiaimwian	
SECURITY NEEDS AND TOURISTS SATISFACTION DURING ARGUNGU FISHING FESTIVAL, KEBBI STATE, NIGERIA	192-207
Lawal, Musediq Olufemi; Oyediran, Olorunfemi Boye & Chikezie, Chizoba Jude	
RETHINKING THE PHENOMENOLOGY OF CHILD SOLDIERS IN AFRICA	208-219
HUSSAINI, Momoh Lawal	
COURTS' TREATMENT OF CRIMINAL ISSUES INVOLVED IN SELECTED NIGERIA'S GUBERNATORIAL ELECTION PETITIONS	220-236
Adeyinka, Tajudeen Yusuf & Okunola, Rasidi Akanji	
PERCEIVED HEALTH RISKS AND CONTINUED PATRONAGE OF UNTRAINED BIRTH ATTENDANTS FOR RURAL WOMEN IN NIGERIA	237-255
Kazeem Lateef Kolawole & Olusegun Fariudeen Liadi	

EFFECTS OF POOR SANITATION ON HEALTH OF UNDERGRADUATE STUDENTS IN HALL OF RESIDENTS, UNIVERSITY OF ILORIN

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Abstract

As the strategies and practice with regards to protecting health measures. Diseases associated with poor sanitation include cholera, as well as typhoid among others. The safe and clean environment can protect the students and animate dynamic learning. It is in line with this to investigate the perceived effects of poor sanitation on health of residents in hall of residents, University of Ilorin. The theory of Sanitary further explain the phenomena of effects of poor sanitation. The sampling technique to select 222 respondents for the study. The analysis using spearman rank correlation. The results indicated that there is relationship between typhoid and poor sanitation. In view of the needs that undergraduate students staying in hall of residents should ensure they preserve food from bacterium contamination to avoid typhoid

n, Health, Student, Effect, Undergraduate

In an environment, students' health has been a contributory factor to the environment over the years because it determines their ability to read and learn. World Health Organisation (1946) defines health as a state of mental and social well-being, and not merely the absence of disease or illness. WHO (2007) considered sanitation as the provision of safe disposal of human urine and faeces. It has been understood that sanitation is known to significantly affect health both in households and across the country (2007).

Uganda (2013) asserted that health impacts learning and education. When that, poor sanitation causes diarrhoea which keeps students in hospital instead of in schools. They additionally noticed that diarrhoea kills 1.5 million children every year. Clearly, a sick person cannot learn properly. Poor sanitation leads to waterborne diseases (like typhoid, cholera), infections with stunted growth and malnutrition (Sharma, 2014). About 300 people in low- and middle income countries die as a result of diarrhoea, and hygiene each year, representing 60% of total diarrhoea

death. Poor sanitation is believed to be the main cause in some 432 000 of these deaths (WHO, 2019). Keen interest in sanitation can lessen disease, increment household earnings, retain students in school, help safeguard the environment, and upgrade human dignity. Increasing evidence additionally demonstrates that school sanitation and cleanliness training projects offer mind-boggling expense advantage (Danida, 2007). Environmental sanitation includes the control of network water supplies, food supplies and waste water transfer, refuse disposal, diseases vectors, housing situations, food supplies and taking care of climatic conditions and the safety of the workplace (Evans, Vandervoorden & Pearl, 2009).

Meanwhile, the world requirements for the essential sanitation services like drinking water supply, excreta and waste water disposal, have incredibly increased because of rapid population growth and higher expectations (Thor, 2005). Thor further opined that the major way of solving environmental issues is the encouragement of research in environmental sanitation. Be that as it may, providing sanitation to students requires a framework approach as opposed to just focusing only on the latrine or water squander treatment plan (Tilley, Ulrich, Lüthi, Reymond & Zurbrugg, 2014). Sanitation framework approach includes faeces gathering, conveyance and treatment (Sustainable Sanitation Alliance, 2008). The main goal of a sanitation framework is to ensure and advance human health by ensuring a clean environment and eliminating the cycle of disease. Sanitation types are many, which include community-led total sanitation, dry sanitation, ecological sanitation and environmental sanitation (Sanni, 2015).

Nigerian universities don't seem to be free from environmental sanitation problems, as an example, lack of cleanness of the environment and toilets facilities, inadequate water supply, damaged or broken facilities (Adukia 2014; Cao, Fujii & Managi, 2015). In spite of the efforts made by the management of university of Ilorin to curb environmental sanitation problems, the hygienic conditions of some of the hostels and the other part of the University cannot say to be very satisfactory. This situation can have an implication on the health of the students as well as that of their lecturers. The safe and clean environment can promote the health of the students and stimulate active learning. It is against this background that the researcher is interested in the assessment of the perceived effects of poor sanitation on health of undergraduate students in hall of residents in University of Ilorin.

Objectives

The general objective of the study is to assess the effects of poor sanitation on health of undergraduate students in hall of residents, University of Ilorin, Ilorin, Nigeria. In a bid to achieve this, the study develops the following specific objectives:

1. determination of diarrhoea infection as an effect of poor sanitation on health.
2. determination of typhoid disease as an effect of poor sanitation on health.

Health and Sanitation

Sanitation alludes to the promotion of cleanliness and prevention of disease through the provision and access to safe water, satisfactory sanitation facilities and good individual cleanliness practices. In spite of the fact that it affects many, not so many advocated it (Mara, Lane, Scott & Trouba, 2010). A sustainable sanitary framework

a clean environment that ensures and promotes human health, eliminate and is socio-economically reasonable and appropriate (Okot-Okumu & O).

2010) expressed that 'health' is a condition of complete physical, mental being but not merely the absence of disease or infirmity. Health is a man right and the attainment of a highest conceivable dimension of health Lancet, 2010). There is high morbidity and mortality identified with er, poor sanitation and poor cleanliness globally, with the developing the greatest burden. Sanitation related diseases disables and kill a million ly (WHO, 2010). The numbers of individuals without improved sanitation is toilets or latrines globally stands at 2.0 billion and of these 673 million the open for example in street gutters, behind bushes or into open bodies), 2019).

showed that an estimated 400 million children have reduced learning e of intestinal worm invasion (Hall & Andrew, 2008); while as indicated al Resource Centre on Water and Sanitation (2005), 75 percent of s in marginalized areas dropped out of school because of the absence of nitation facilities in school. Sanitation could likewise be depicted as the e individuals request, impact and sustain a cleanliness and healthy or themselves as well as other people by raising obstructions to avert the f disease agents so as to establish foundation for sustainable development

presence of parasitic diseases in a community is firmly identified with an initiation and 88% of diarrhoeal diseases are ascribed to perilous water inadequate sanitation (IRC & McIntyre, 2006). Tending to sanitation and home hygiene has been exhibited to bring down the rate of such diseases % (Waterkyn & Cairncross 2005; IRC & McIntyre, 2006). Not exclusively sanitation and hygiene conditions provide increased health benefits; they give substantial advantages to the overall livelihood of the community & Kolsky, 2003). These include: Saving time; reducing cost of living; stress; better learning limits of kids and improved school participation; of women; and more prominent rural efficiency because of more prominent

ity. Environmental sanitation is practices that add to keeping the surroundings where ve tidy, clean and safe. Environmental sanitation alludes to the measures trol or change the physical environment to forestall the transmission of people (Sunanpouw & Risjani, 2014). Subsequently, environmental plies interventions proposed to improve access to safe and satisfactory water encourage the sterile disposal of human excreta and household wastes, and to in behaviours through hygiene education.

sanitation in non-family unit settings, for instance schools, offices and influence the wellbeing, education, welfare and proficiency of peoples a low-middle income countries. These impacts excessively influence certain ple. For example, an absence of gender separated toilets at schools impacts of girls and the other way around. Nevertheless, individuals with exceptional

needs make up 15% of the overall people that likewise face physical and so obstructions related to poor sanitation, possibly shielding them from going to cl picking up livelihood, and utilizing social amenities and conveniences (Kumar, Kar Jain, 2011).

Diseases related with poor sanitation incorporate diarrhoea, cholera, typhc dysentery, hepatitis A, Poliomyelitis, acute respiratory infections as well as s transmitted-helminth infections among others. School Water, Sanitation and Hygih Education (SWASH) refers to the collaborative efforts of various stakeholders government, NGOs and international institutions to guarantee safe and healthy scho through the provision of clean water, latrines for both girls and boys, and appropri hygiene education.

Poor Sanitation and Diarrhoea Diseases

Diarrhoea is characterized as the passage of three or more loose or liquid sto per day (WHO, 2013). Diarrhoeal diseases are brought about by infectious agents such bacteria (for example *E. coli*, salmonella, shigella, campylobacter), viruses (for exam rotaviruses, noro-viruses and adenoviruses), and protozoa (for example cryptosporidit amoeba and giardia).

However, the aetiology of diarrhoeal diseases varies from region to regi Rotavirus is the primary cause of severe and moderate diarrhoea (Lozano, Naght Foreman, Lim, Shibuya, Aboyans & Cross, 2013; Kotloff, Nataro, Blackwelder, Nasl Farag, Panchalingam & Levine, 2013). Just a little extent of diarrhoea cases result fr non-infectious conditions (for example, intoxication or non-infectious inflammatory diseases) (WHO, 2014).

Most diarrhoeal deaths are among youngsters under the age of five (Prüss-Ust Bartram, Clasen, Colford, Cumming, Curtis & Cairncross, 2014), and within low-inc nations, the poor experience the ill effects of diarrhea than others. In both low middle-income nations, diarrhoeal disease is the second leading cause of morbidity mortality among kids younger than five (Lim, Vos, Flaxman, Danaei, Shibuya, Ad Rohani & Davis, 2013; Walker, Rudan, Liu, Nair, Theodoratou, Bhutta & Black, 20 Murray, Barber, Foreman, Ozgoren, Abd-Allah, Abera & Badawi, 2015), and the n cause of death in sub-Saharan Africa (Prüss-Ustün et al., 2014).

Approximately 1.5 million kids younger than five died of diarrhoeal disease 2012 (Prüss-Ustün et al., 2014). Diarrhoeal disease can likewise influence a chil nutritional status, with the related health and socio-economic consequences. Check Buckley, Gilman, Assis, Guerrant, Morris and Mølbak, (2008) found that 25% stunting in children under the age of two could be because of at least five diarrhe episodes. Long-term exposure to faecal pathogens may likewise partly cla environmental enteric dysfunction (EED) (Humphrey, 2009).

Various measures can inhibit diarrhoea diseases from manifesting. They incl breast feeding, which gives infants the antibodies to fight against infections. Impro weaning practices, appropriate use of water for hygiene and drinking, hand wash disposal of faeces appropriately, immunization, vaccinations and proper nutrit (Jailson, Correa, Manish, Patel & Osamumu, 2010). To execute these procedures,

ion must be educated about appropriate practices and utilize the h specialist and village health workers. This rapy of diarrhoea ought to be maintained a strategic distance from. This ds that some drugs might be conceivably toxic to certain patients rse reactions. Non-compliance with therapy may likewise prompt ction (WHO, 2008). The WHO therefore prescribes that anti-diarrhoea avoided as they may prolong infection and mask signs of dehydration.

and Typhoid

1 fever is a solely human, faeco-orally transmitted, systemic disease y infection with the bacterium *Salmonella enterica* subspecies enterica (S. Typhi). Typhoid causes an estimated 21 million cases and 223,000 ear, most especially in south Asia and sub Saharan Africa (Mogasale, ai, Lee, Mogasale, Ramani & Wierzba, 2014). S. Typhi transmission le as the only known reservoir and people with intense typhoid and rimary risk for infection to other people.

e of a high infectious dose of around 104 organisms, direct transmission hout some sort of vehicle is believed to be uncommon and has just been rcribed during oral-anal sexual practices. Indirect transmission involving prehended to be the most widely recognized form and is additionally

,"short-cycle" and "long cycle" transmission. ycle transmission happens when a household member excreting S. Typhi food or water leading to local transmission often within the same ile, Long cycle transmission happens when contaminated human faeces or s into environmental reservoirs, for example, water sources or food

tens and infects individuals through these vehicles. id remains a genuine medical problem in much of the developing world, ow income, high density settings. Additionally, from 2 to 5% of Typhoid will remain long-term asymptomatic "carriers" and excrete the pathogen nment from their stool and urine for years (Baker, Holt, Clements, Karkey, & Farrar, 2011; Watson & Edmunds, 2015). The delivery of potable water, itation infrastructure and hygiene promotion (WASH) remain the typhoid prevention and control; while vaccination is also recommended y an endemic and epidemic settings (WHO, 2008). Despite a continued e of the major water related plagues, much is still unknown about the is bacterial pathogen and the complexity of the disease in endemic areas iksen, Mikoletti, Keddy & Ochiai, 2015).

ramework; the Sanitary Idea

imperative to take note that many of the proponents of the "Sanitary Idea" win Chadwick (1850-1875) were of the conviction that disease was caused foul vapours. Since sewage and garbage smelled bad, they were associated which pushes the individuals to tidy up the environment. Chadwick was in making a focal public health administration that paved the way for ore garbage disposal, regulation of housing, and regulations regarding

nuisances and offensive trade. This "Sanitary Idea" brought about remarkable improvements in health and well-being. In line with the study, it could be concluded th disease is as a result of breakdown of adaptation and in order to reduce the upsurge disease in the society we need to all participate in a sanitation practices and good hygiene which will increase the wellbeing and the health of the members of the public.

Methodology

The study takes place in Hall of residents, University of Ilorin, Ilorin, Kwa State. Kwa is a state located in north-central Nigeria. University of Ilorin, also known as Unilorin, is university owned by the federal government. It was founded by a decree the Federal Military Government in August, 1975. The university has twenty four (2) hall of residents in which eighteen (18) are private owned and six (6) are university owned with total number of seven thousand, five hundred and thirteen (7,511) undergraduate students. The study adopts the survey method with questionnaire as tool of data collection. A sample of 222 respondents was drawn using multi-stage sampling technique. First, stratified sampling was used to divide the hall of residents terms of ownership. With this, two strata were arrived at. Following this, purposive sampling technique was used to select four (4) halls of residents (i.e two halls of resident from each stratum). And lastly, simple random sampling technique was used to select 10% of the total population in the selected hall of residents.

Results

Hypothesis One

H_0 = Diarrhoea infection will not significantly be an effect of poor sanitation on health

Table 1: Correlation Table of Diarrhoea against Effect of Poor Sanitation

	Diarrhoea	Effect of Poor Sanitation
Spearman's rho	Correlation Coefficient	1.000
	Sig. (2-tailed)	.959**
	N	222
	Correlation Coefficient	.000
Effect of Poor Sanitation	Correlation Coefficient	.000
	Sig. (2-tailed)	.959**
	N	222

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

Source: Researchers' Fieldwork (2019)

A Spearman's correlation was run to assess the relationship between diarrhoea and effect of poor sanitation, with the analysis based on 220 respondents. There is a strong positive relationship between diarrhoea and effect of poor sanitation, which is statistically significant, $r(220) = .959, p < 0.01$

isease will not significantly be an effect of poor sanitation on health

ation Table of Typhoid against Effect of Poor Sanitation

Typhoid	Correlation Coefficient		Typhoid	Effect of Poor Sanitation
	Sig. (2-tailed)	N		
Effect of Poor Sanitation			1.000	.411**
	Correlation Coefficient		222	.000
	Sig. (2-tailed)		.411**	222
			.000	1.000
		N	222	222

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

chers' Fieldwork (2019)

rman's correlation was run to assess the relationship between typhoid and
anitation, with the analysis based on 220 respondents. There is a positive
tween typhoid and effect of poor sanitation, which is statistically
20) = .411, $p < 0.01$

Findings

esis one indicated that diarrhea infection is an effect of poor sanitation on
graduate students in hall of residents, University of Ilorin. The finding is
with the findings of WaterAid Uganda (2013) which showed that health
ig and education impacts health implying that, poor sanitation causes
h keeps students in emergency clinics instead of in schools. They
ticed that diarrhoea kills 1.5 million children every year. Also, the
asitic diseases in a community is closely related to a lack of sanitation and
eal diseases are ascribed to perilous water supply and lacking sanitation
re, 2006).

esis two indicated that there is relationship between typhoid and effect of
on health of undergraduate students in hall of residence, University of
symptoms include prolonged fever, fatigue, headache, nausea, abdominal
pation. Severe cases may lead to serious complications or even death. The
e with the findings of Mogasale, Maskery, Ochial, Lee, Mogasale, Ramani
2014) who claimed that typhoid causes an estimated 21 million cases and
every year, most especially in south Asia and sub Saharan Africa. Also,
e asserted that poor sanitation lead to waterborne diseases (like typhoid and
ions with intestinal worms, stunted growth and malnutrition.

Conclusion

The finding of the study reveals that diarrhea infection (passage of three or more
loose or liquid stools per day) is an effect of poor sanitation on health of undergraduat
students in hall of residents in University of Ilorin. The finding also reveals that typhoid
(an exclusively human, faeco-orally transmitted, systemic disease caused by infection
with the bacterium *Salmonella typhimurium*) is an effect of poor sanitation on health o
undergraduate students in hall of residents in University of Ilorin.

Recommendations

It is based on these that the study recommends numbers of measures which can
prevent diarrhea infection from manifesting. They include proper usage of water for
hygiene and drinking, hand washing, disposal of feces properly, vaccinations and proper
nutrition. To implement these measures, undergraduate students must be educated about
proper environmental sanitation practices and utilize the health care services. The stud
further recommends the delivery of potable water, adequate sanitation infrastructure an
hygiene promotion (WASH) as the foundations of typhoid prevention and control, while
vaccination is also recommended for use in endemic and epidemic settings.

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VOLUME 5 NO. 2, DECEMBER, 2019