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INFECTIOUS DISEASES AS CORRELATE OF PUBLIC HEALTH AND ACADEMIC PERFORMANCE AMONG STUDENTS OF IBRAHIM BADAMASI BABANGIDA UNIVERSITY, LAPAI NIGER STATE

***SULEIMAN, SULEIMAN CHADO (PhD); & **DR. RAMAATU HARUNA**

*Department of Counselling Psychology, Ibrahim Badamasi Babangida University, Lapai, Niger State.
**Education Foundation Unit, Ibrahim Badamasi Babangida University, Lapai, Niger State.
Corresponding Author:
suleimansuleiman7@gmail.com
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Abstract

The study examines infectious diseases as correlates of public health and academic performance among students of Ibrahim Badamasi Babangida University, Lapai Niger State. This study was conducted using correlation research design (linear method). The population of the study comprised the entire students of the 6 faculties in Ibrahim Badamasi Babangida University, Lapai Niger State. A sample of 461 students was drawn through random sampling technique. The study adopted researcher self developed questionnaire titled "Infectious Diseases and Public Health Questionnaire (IDAPHQ) for data collection, and their scores in GST couses [redacted] was used to assess their academic performance. Draft copies of the measuring instruments were presented to 3 experts from department of counselling psychology and school of health and technology, minna for validation. Cronbach Alpha statistical tool was employed to determine the reliability of the measuring instrument with psychometric index of 0.83. To answer the research questions Point

Key words:
Infectious diseases,
Public health,
Academic performance,
Students

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Biserial Correlation Coefficient was used and the hypotheses were tested using students' t-test of significance correlation at α p < 0.05 level of significance. It was found that there is a very high positive relationship between infectious diseases, and public health. There is also a very high positive relationship between infectious diseases and students academic performance. Therefore, it was recommended students should ensure that they observe high personal hygiene and sanitation of their environment to efficiently improve their mental health and academic performance.

Introduction

The mental health and wellbeing of man has been a subject of challenge by pathogens as he engages in activities with other living organisms in the eco-system to make a living. Students as human being through their daily activities generate waste matter that grows pathogens and causes diseases in man. An infectious disease is the type of diseases that causes poor health condition. Micro organisms are the main causative agents of infectious diseases that spread from one individual to another through a vector. According Hornby, (2010) Infectious diseases is defined as diseases that can be passed easily from one person to another, especially through the air they breathe. Because of their easy ways of transmission infectious diseases are many and everywhere. In Nigeria infectious diseases are very rampant, their impacts are immense, affecting life of the people directly, they are the most diseases that cause death as well as create a remarkable impact in the society, political system and plans of the country. (WHO, 2021).

The prevalence of infectious diseases in Nigeria is seen as one of the major problem in Nigeria. The nationwide overall prevalence of all infectious diseases syndromes was 71.8 per 10,000 populations between 2009 and 2017. The average number of all infectious diseases syndromes was 14,519 (range 5229 to 55,132) per year. Kolawole, (2022) "Communicable diseases are the major causes of death in Nigeria and accounts for 76% of child mortality. Tuberculosis and malaria accounts for the highest causes of death by infectious diseases in Nigeria". The disease experience in Nigeria has been that of emerging and re-emerging outbreaks. Nigeria has the highest burden of infectious diseases in sub-Saharan Africa and has seen recurrent outbreaks of diseases such as Cholera, Meningitis, poliomyelitis etc

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in the last decade. This was the main reason why infectious diseases have become a major source of concerned to public health in Nigeria Kolawole, (2022).

The importance of Public health in Nigeria cannot be under scored. For decades, the recognition of public health and its relationship to the health of population waxed and waned with current events. Public health appears to be something that individuals understand intuitively, but have difficulty defining specially, as evidenced by various definitions of public health found in the literature. The classic definition of public health by Winslow. (1920) describes it as

> " the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintance of health" (p.183).

This definition, thus old but all encompasses as it still covers nature, scope and the philosophy of public health at this modern days. Comprehensive school health consists of "an organized set of policies, procedures, and activities designed to protect and promote the health and wellbeing of students and staff which traditionally includes health services, healthful school environment, and heath education" and provides an alternate mechanism for the potentials of comprehensive school health programs has been advocated since 1987, it has rarely been realized (Cottrell et al, 2002). The school, especially the university is adequately cared and provided same as the community, with all basic amenities as said the learning facilities. There by equating it status to that of a community. Turnock, (2001) suggested the greatest gains in alleviating today's major health problems will come from collective action, especially at community level. Community is defined in geographic terms, but as aggregates of individuals who share common characteristics or other bonds" and who effectively uses assets to achieve their health goals. Within the parameter of this definition schools private and public, tertiary and non tertiary institutions can be defined as a communities.

Health services provided by full-service schools often resemble services provided by local health departments. Serious health problems faced by students including chronic lifestyle diseases such as obesity, diabetes, high blood pressure, and the social and culture conditions that breed depression, anxiety, and poor self-esteem demand a change in service delivery approach (Peterson, Cooper & Laird, (2001). Schools face a crisis in adolescent and adult health characterized by poverty, social alienation, lack of medical insurance, and Medicare and service ineligibility. All these pose poor health conditions on the students and a setback on his academic. Academic performance is regarded as the involvement of student in the daily school activities, that comprise of teaching, learning and other extracurricular activities carried out with and outside the school and that is been assessed as parts of the students progress in the school on daily or term basis.. According to Narad and Abdullahi, (2016) started that academic performance is the knowledge gained which is assessed by marks by a teacher and or educational goals set by students and teachers to be achieved over specific period of time, while Honey, (2023) viewed academic performance is an extent to which a student, teacher or institution has attained their short or long term educational goals and is measured either by continuous assessment or cumulative grade point average The academic progress of students can be hampered by the impacts of infectious diseases in the community or school environment and where adequate medical attention is lacking could led to the student being absents from the class or the school form some unexpected period of time that could result to decreased in his academic performance. Research confirms a direct link between student health and their capacity to learn at school. Health and education are no longer viewed as separate, but as intertwined and interdependent system. There is a complex relationship between student's health and academic performance, (Ickovics et al., 2014) with poor health often negatively affecting student's attendance, ability to learn in school and examination grades. Ill health among students affect their growth, retard mental development, and reduce motivation with consequent reduction in their ability to take advantage of learning opportunities at school (Ickovics et al., 2014; Santanu & Saha 2013). Steven, et al. (2015) Students with poor health has a higher probability of school failure, grade retention and dropout. Lapai the host community of Ibrahim Badamasi Babangida University enjoyed the status and privileges of a third tier government. Going by the population, Lapai has 200,700 million population projections, 66.46/km^2 population density, 3.4%

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Annual population (change and covers an area of 3,020km^2. (NBS, 2022). In the area of health facilities, Lapai has a General hospital and other handful of pocketed privately own hospital that provides adequate health services asides other specialist hospital in Gulu and the general hospital at Muye that covers Lapai and its environs.. Prevalence of infectious diseases is abounding everywhere in Nigeria. According to Centers for Diseases Control and Prevention (CDC, 2021) Countries with strong and resilient public health system can quickly prevent, detect, and respond to infectious diseases threats. Public health expertise in Nigeria has been strengthened throughout the control of HIV, TB, and malaria, the eradication of wild virus, the response to mpox, and preparedness of efforts influenza and other pandemic diseases.

Major infectious diseases in Nigeria: degree of risk: very high (2020)

1. **Food and waterborne diseases:** Bacterial and protozoa hepatitis A and E, and typhoid fever.
2. **Vector borne diseases:** malaria, dengue fever, and yellow fever.
3. **Water contact diseases:** Leptospirosis and schistosomiasis.
4. **Animal contact diseases:** Rabies.
5. **Respiratory diseases:** Meningococcal meningitis.
6. **Aerosolized dust or soil contact diseases:** Lassa fever.

Hepatitis A- Viral diseases that interfere with the functioning of the liver, spread through consumption of food or water contaminated with fecal matter, principally in areas of poor sanitation, victims exhibit fever. Jaundice, and diarrhea, 15% of the victims will experience prolonged symptom of over 6-9months, vaccine available.

Hepatitis E- Water borne viral disease that interferes with the functioning of the liver, most commonly spread through fecal contamination of drinking water, victims exhibit jaundice, fatigue, abdominal pain and dark colored urine.

Typhoid Fever – Bacterial disease spread through contact with food or water contaminated by fecal matter or sewage, victim's exhibit sustained high fevers, left untreated, mortality rates can reach 20%.

Malaria – Caused by single –cell parasitic protozoa plasmodium, transmitted to humans via the bite of female *Anopheles* mosquito, parasites multiple in the liver attacking red blood cells resulting in cycles of fever, chills, and sweats

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accompanied by anemia, death due to demages in vital organs and interruption of blood supply to the brain.

Dengue fever – Mosquito- borne (*Aedes aegypt*) viral disease associated with urban environment manifests as sudden onset of fever and severe headache, occasionally produces shock and hemorrhage leading to death in 5% of the cases.

Yellow fever – Mosquito –borne (in urban areas Aedes aegypt) viral disease, severity range from influenza-like symptoms to severe hepatitis and hemorrhagic fever, occur only in tropical South America and sub Saharan Africa, where most cases are reported, fatality rate is less than 20%.

Leptospirosis- Bacterial disease that affects animals and humans, infection occurs through contact with water, food or soil contaminated by animal urine, symptoms include high fever, severe headache, vomiting, jaundice, and diarrhea, untreated, the disease can result in kidney damage , liver failure, meningitis or respiratory diseases, fatality rates are low but left untreated recovery can take months.

Schistosomiiasis – Caused by parasitic dermatome flatworm *Schistosoma*, fresh water snails act as intermediate host and release larval from of parasite that penetrate the skin of people exposed to contaminated water, worms mature and reproduce in the blood vessels, liver, kidneys, and intestines releasing eggs, which become trapped in tissues triggring an immune response. Occur in advance cases usually due to bladder cancer endemic in 74 developing countries with 80% of infected people living in sub Saharan Africa, human s act as the reservoir for this parasite.

Meningitis- Bacterial disease causing an inflamination of the lining of the brain and spinal cord, one of the most important bacterial pathogens is the *Neisseria meningitides* because of its potential to cause epidemics, symptoms include stiff neck, high fever, headaches, and vomiting, bacteria are transited from person to person by respiratory droplets and facilitated by close and prolonged contact resulting from crowded living conditions, often with a seasonal distribution, death occurs in 5 -15% cases, typically within 24-48 hours of onset of symptoms, highest burden of meningococcal disease occurs in the hyperendemic region of sub Saharan Africa known as the "Meningitis Belt" which stretches from Senegal east to Ethiopia.

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Rabies- Viral disease of mammals usually transited through the bite of an infected animal, most commonly dogs, virus affected the cental nervous system causing brain alteration and death, symptoms initially are non- specific fever and headache, progressing to neurological symptoms , death occur within days of the onset of symptoms (CIA World Facebook, 2021).

From the above record, infectious diseases commonly among the students of IBB University, Lapai includes but not only the followings: Typhoid fever, yellow fever, influenza (flu), Common cold, Glargiasis and Diphtheria. Others are Stomach flu (gastroenteritis), and Hepatitis.

The purpose of this study was to examine infectious diseases as correlate of public health and academic performance among students of Ibrahim Badamasi Babangida University, Lapai. Specifically the study sort to:

1. Identify the relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai Niger State
2. Determine the relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai Niger State

These research questions were to guide the study:

1. What is the relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai Niger State?
2. What is the relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai Niger State?

The following null hypotheses were formulated at 0.05 level of significance.

Ho_1: The relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University is not significant.

Ho_2: The relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University is not significant.

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Method

The study was conducted on correlation research design using linear method. The population of the study comprised the entire students of the 6 faculties in Ibrahim Badamasi Babangida University, Lapai Niger State. A sample of 472 students was drawn through random sampling technique. The study adopted researcher self developed questionnaire titled "Infectious Diseases and Public Health Questionnaire (IDAPHQ) for data collection, and their scores in GST courses were used to assess their academic performance Draft copies of the measuring instruments were presented to 3 experts from department counselling psychology and school of health and technology, minna for validation. Cronbach Alpha statistical tool was employed to determine the reliability of the measuring instrument with psychometric index of 0.83. The researcher and two other research assistant were involved in administering the measuring instruments to the respondents and waited till they finished. At end of the measure 461 copies of the questionnaires was certified okay representing 97.7% rate of mortality. To answer the research questions Point Biserial Correlation Coefficient was used and the hypotheses were tested using students' t-test of significance correlation at α $p < 0.05$ level of significance.

Results

Table 1. Point Biserial summary and t-test significance of correlation analysis for the relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai.

n	r	∞	df	t_{cal}	t_{tab}	Decision
416	0.47	0.05	459	43.42	1.96	Rejected

Table 1. Indicated Point Biserial and t-test significance of correlation depicting the relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai. This analysis shows that the correlation coefficient is 0.47 which means that there is a very strong positive relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai. The above table was also used to

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test the hypothesis which shows that t-cal of 43.42 less than the t-tab 1.96 implying that null hypothesis is not accepted, and concluding that the relationship between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai is significant.

Table 2. Point Biserial summary and t-test significance of correlation analysis for the relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai.

n	r	∞	df	t_{cal}	t_{tab}	Decision
416	0.90	0.05	459	45.40	1.96	Rejected

Table 2. Indicated Point Biserial and t test significance of correlation analysis for the relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai. This analysis shows that the correlation coefficient is 0.90 which means that there is a very strong positive relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai, The above table was also used to test the hypothesis which shows that the t-cal of 45.40 is greater than the t-tab of 1.96 implying that the null hypothesis is not accepted and concluding that the relationship between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai is significant.

Discussion of Findings

This study found that the correlate between infectious diseases and public health among students of Ibrahim Badamasi Babangida University, Lapai is significant. This explain that an outbreak of infectious diseases and influence the wellbeing of people in community (public health). This shows that the correlate is obvious. This can be understood that when there is high level of infectious diseases, there the tendency that poor health condition in the community (public health) will be high but if otherwise will be reduce. This finding is concur from the assertion by Kolawole, (2022) Nigeria has the highest burden of infectious diseases in sub-Saharan Africa and has seen recurrent outbreaks of diseases such as Cholera, Meningitis, poliomyelitis etc in the last decade. This was the main reason why

infectious diseases have become a major source of concerned to public health in Nigeria.

The study further revealed that the correlates between infectious diseases and academic performance among students of Ibrahim Badamasi Babangida University, Lapai is significant. This has brought to bear that infectious diseases could influenced the academic performance of students. This implies that the correlate is commendable. It can also be deduced that when there is here level of infectious diseases condition in the university community the academic input of the students will be low and if otherwise it will be high. To support this study finding is Ickovics et al., (2014) revealed that poor health often negatively affecting student's attendance, ability to learn in school and examination grades. Ill health among students affects their growth, retard mental development, and reduce motivation with consequent reduction in their ability to take advantage of learning opportunities at school.

Conclusion

From the study of infectious diseases as correlates of public health and academic performance among students of Ibrahim Badamasi Babangida University, Lapai Niger State. It can be concluded that from this study, there is a very strong statistical positive relationship infectious diseases and public health and academic performance among students. This revealed the relationship is significant.

Educational Implications

The following posed as the immediate educational implications:

1. Infected students are stopped from attending school there by missing lectures.
2. Protracted infectious diseases can affects students academic performance
3. To avoid spread of infectious diseases infected students are given immediate medical attention.
4. Regular sanitation of school environment can prevent outbreak of infectious diseases among students.

Recommendations

The following recommendations were reached from the study:

1. Personal hygiene and regular environmental sanitation will reduced the spread of infectious diseases.
2. Regular hand washes before and after defecation will reduce the spread of pathogens.
3. Zero infectious tolerances will enhanced students academic performance

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