

Prevalence of Communicable Diseases among children between 0-12 years in Ayamelum Local Government Area of Anambra State

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Abstract

Infectious or communicable diseases comprise clinically evident illness characteristic medical signs and/or symptoms of disease resulting from the infection, presence and growth of pathogenic biological agents in an individual host organism. In certain cases, infectious diseases may be asymptomatic. School health programs could not be fully implemented without having staff, teachers, and parent's cooperation and involvement. This study evaluates various ways to eradicate communicable diseases in among children between 0-12 in Ayamelum Local Government Area of Anambra State. Specifically, the study sought answers to the level of teachers and parents' awareness, the modes of transmitting communicable diseases, various health implications and possible programs for disease control among others. A descriptive study was carried out; the population of the study consisted 400 nursing mothers and teachers selected from five secondary schools in the study area (teachers 209, parents 191) whose children are between the age of 0-12years. Simple Random Sampling Technique was used to draw a sample size of 110 respondents for the research study. Questionnaire was designed for data collection which was sub-divided into two main parts: socio demographic characteristics and knowledge and attitudes about communicable disease. The findings of the study revealed among others that the majority of the respondent's knowledge about communicable diseases was very poor and deteriorating. The study concluded that both the parents and teachers need continuing education programs about common communicable disease in Ayamelum Local Government Area of Anambra State. They need to be developed in the ways of preventing these diseases. Based on this findings, the study recommends among others that Screening, deworming and health education should necessarily be a component of the primary health care program with a focus on school children communicable diseases such as the Intestinal helminthes control program should focus more on health education, the need for proper disposal of faeces and good toilet facilities.

Keywords: *Prevalence of Malaria, communicable diseases, pathogenic, asymptomatic, transmission*

1.0 Introduction

A communicable disease is an illness caused by a specific infectious agent or its toxic products (Heymann, 2004). It arises through transmission of that agent or its products from an infected person or animal to a susceptible host either direct or indirectly through an intermediate plant or animal host, vector or the inanimate environment (London, 1999). Infectious disease can be a major cause of illness among children, especially within the age brackets 0-12 years and can affect a child's schooling by causing absenteeism. They may in turn, affect other children and staff, and can prevent parents' careers ability to work, especially where both parents work (Crosson, 2000).

School health programs could not be fully implemented without having staff and parent's cooperation and involvement. Parents, community leaders and teachers often can and do serve as role models for students. Students serve as a linkage with school and family while parents can and should cooperate with schools to help their children (Lee, Lee and Kim, 2010). Communicable diseases spread quickly among children in the classroom, there must be gathered printable and advise for germ prevention in school (Crosson, 1999). Recent years have seen a dramatic increase in public concern about communicable diseases in the schools all over the world. School administrations must find ways to strike a balance between protecting the general school

population from exposure to dangerous communicable diseases and ensuring the infected student's right to privacy and to public education (Meeks, Heit and Page, 2003).

Parasitic infestations are common in Nigeria especially in rural areas. One fact is that these infections have been associated with low standard of sanitation and between 500 million and 1 billion people are estimated to be infected annually worldwide (WHO,1992; Taiwo and Agbolade,2000; Adeyeba and Akinlabi,2002).

It is recognized that certain factors play important roles which include: the strain and number of the parasites, age and level of immunity at the time of infestation, immune responses to the infestations, presence of co-existing diseases or conditions which reduce immune responses, malnutritional undertone due to iron deficiency, folic acid and protein deficiency. This could occur singly or in combination with other causative agents (McGregor *et al.*, 1996).

Intestinal parasites are parasites that populate the gastro- intestinal tract. In humans, they are often spread by poor hygiene related to faeces, contact with animals or poorly cooked food containing parasites. The major groups of parasites include protozoans (organisms having only one cell) and parasitic worms (Helminthes) of these, Protozoans, including Cryptosporidium, Microsporidium and Isospora are most common in HIV-infected persons. Others are *Entamoebahistolytica*, *Balantidium coli*, *Giardia lamblia* etc, each of these parasites can infect the digestive tract, and sometimes two or more can cause infection at the same time.

Human intestinal helminthic parasites are worms that inhabit the body lumens of the gut (Agbolade *et al.*, 2004), they are among the most common infection occurring throughout the developing world. Intestinal parasites are regarded as important public health problem in tropical Africa (Odutan *et al.*,1974). These parasites are amongst the most prevalent human infections affecting approximately one quarter of the world's populations, mainly school children due to their poor hygienic nature or poor sanitary conditions coupled with their voracious eating habits (WHO,2002).

Parasites can get into the intestine through the mouth from uncooked or unwashed food, contaminated water or hands or by skin contact with larva infection soil. People can also become infected with intestinal parasites if they have mouth contact with the genital or rectal area of a sexual partner who is infected (e.g. oral sex or anal-oral contact). When the organisms are swallowed, they move into the intestine, where they reproduce and cause disease.

In some people, intestinal parasites do not cause any symptoms or the symptoms may come and go. Common signs and complaints include coughing, cramping, abdominal pain, bloating, flatulence and diarrhea. In more serious diminished sex drive, skin-itching, fever, nausea, vomiting or bloody stools may occur. Some parasites also cause low red blood count (anemia) and some travel from the lungs to the intestinal or vice versa and other parts of the body. Therefore, laboratory tests are necessary to determine their cause.

However, because many parasitic infections especially those of helminthes origin are usually asymptomatic or produce only mild symptoms, they are often neglected until serious complications or chronic clinical pictures appear (WHO, 2002). The presence of these parasites in asymptomatic carriers has been a major source of infection to susceptible hosts, hence compounding the problem.

In endemic countries, gastro-intestinal infections are most prevalent in rural communities, peri-urban settings and urban slums (Fashyi *et al.*, 1999). Although, intestinal parasites could be considered as major problem in rural settlements in Nigeria due to their poor socio-economic status and lack of basic amenities such as water, toilets facilities etc. the problems of these infections are also increasing in the urban areas due to similar deficiencies.

The transmission of these communicable diseases (Intestinal infection) has behavioral, environmental and biological bases (Michael *et al.*, 2010). For instance, children tend to be more active in infected environment and rarely employ good sanitary behaviour; also these potential carriers are crowded together for a long period of time (e.g. in school, orphanage or slum); in addition helminthes are masterful immunoregulators and able to elicit a complex and mixed Th₁/Th₂ response that both ward off and subverts an immune response from the host.

Most of parasitological survey of common parasitic infections in Nigeria has been confined to rural villages, where poor sanitation and hygiene as well as a general ignorance of the disease, provide optimal environment for transmission (Damen *et al.*, 2010). In small villages of Nigeria, the parasitic disease burden on school children has been shown to be high even though many of the infections may not cause disease or mortality (Onyiah and Okafor, 2005).

Prevalence of intestinal parasites in some communities and schools in Anambra State has been investigated on, but data on the intestinal parasites of school-aged children in Ayamelum L.G.A could be lacking. Thus this study is designed to gather information on the prevalence of communicable diseases and other related intestinal parasites status and identification of the local risk factors associated with the prevalence in school age children in Ayamelum LGA, hence, providing the baseline information which may aid to medical intervention in form of sanitation and chemotherapy.

In Nigeria, many intervention schemes which were attempted to control these infections did not yield much successes, many are still heavily infected particularly children (Ijagbone and Olagunju, 2006). In view of

the negative socio-economic impact of these parasitic infections on infected humans, efforts would be made to elucidate their epidemiological state among pupils. Therefore the study was to find out the prevalence of communicable diseases, awareness level and various ways in controlling these intestinal parasites; find out the correlation between intestinal parasitic infections and some associated local risk factors among school going children 0-12 years in Ayamelum L.G.A. of Anambra State.

1.2 Statement of the problem

Ayamelum Local Government Area of Anambra State was chosen because it is malaria endemic region (AMREF, 2016) with a very large area under agricultural farming activities. It is also adjacent to a large pool of water and wetlands. These facts indicate that many people in Ayamelum area, school pupils included, are at risk of contracting communicable diseases such as diarrhea, typhoid, intestinal parasite infections, trachoma, and schistosomiasis among others, which account for millions of school lost days (CDC, 2007). A major contributing factor to this burden of communicable disease is inadequate access to safe water and sanitation infrastructure (Boschi-Pinto *et al.*, 2008).

Primary School Pupils are a concerned group that so much research need to be carried out on their health statuses, but it seems majority of the remote areas are neglected, that very little research has been done concerning health challenges due to communicable diseases they face in school (Muna, 2010). A lot of research has been done on health challenges facing infants, under five year olds, and fifteen years and below age brackets, however, much more has to be done. There is little information on the extent of prevalence rates of communicable diseases and the factors affecting their variability among primary schools and therefore need to provide baseline information that will be used by policy makers to come up with viable intervention programs to address communicable disease burden in schools.

1.3 Purpose of the Study

The main aim of the study is to evaluate the prevalence of communicable diseases among children between 0-12 years in Ayamelum Local Government Area of Anambra State. Specifically, the study will:

1. Evaluate various communicable diseases that are common within Ayamelum Local Government Area of Anambra State.
2. Evaluate the various modes of transmitting communicable diseases,
3. Itemize the relationship between environment and communicable diseases and discuss their health risks/implications
4. Itemize the various programs that could be used to control communicable diseases and suggest various activities that could lead to their preventions.

1.4 Research Questions

The following research questions were formulated to guide this study:

1. What are the various communicable diseases that are common among children of 0-12 years in Ayamelum Local Government Area of Anambra State?
2. What are the various modes of transmitting communicable diseases?
3. What is the relationship between environment and communicable diseases and how do these diseases affect health of the pupils?
4. What are the various programs that could be used to control and prevent communicable diseases in Ayamelum Local Government Area of Anambra State?

2.0 Methods

Descriptive survey design was used for the study. According to Akuezilo and Agu (2007) descriptive survey design is one to be representatives of the entire group. The choice of this design was made because it documented events in the most naturally occurring setting.

This study was conducted in Ayamelum, a Local Government Area in Anambra State, south-east Nigeria. Ayamelum was chosen because it is malaria prevalent region (AMREF, 2016) with a large area of land dedicated for agricultural activities. It is also adjacent to a large pool of water and wetlands. These facts indicate that many people in Ayamelum area, school pupils included, are at risk of contracting communicable diseases.

The population of this study consisted 400 nursing mothers and teachers from five secondary schools in the study area (teachers 209, parents 191) whose children are between the age of 0-12years. In determining the sample size, purposive random sampling method was used to sample 110 randomly for the research study.

The instrument used in this study was a structured questionnaire designed by the researcher. The Instrument contains Section A and Section B; Section B contains 20 items structured on a likert four point rating scale of Strongly Agree, Agree, Strongly Disagree and Disagree respectively.

Three experts from the department of measurement and evaluation validated the instrument for data collection. After carefully going through the instrument, they made some corrections and contributions which helped the researcher to modify the instrument finally used for the study.

The questionnaire was administered to the students in the university from the selected departments.

The researcher personally approached the respondents at their various classrooms and gathered the required information through the questionnaire. The distributed questionnaires were returned on the spot. 110 questionnaires were printed, while all of them were correctly distributed. Out of the distributed items, exactly 106 were correctly filled and returned, 4 of the distributed questionnaires were invalidated due to mutilations. These 106 questionnaires were then considered appropriate for analysis.

The returned copies were used for the analysis. In analyzing the research questions, descriptive statistic of mean with standard deviation were used. In answering the research questions, any item less than 3.00 was rejected while a mean score that is equal to or greater than 3.00 were accepted.

3.0 Result

Table (1) Distribution of the respondent's bio-data

Characteristic	Valid	Frequency	Percent
Age	25-29	36	35.8
	30-34	19	16.0
	35-40	12	13.2
	41-63	39	34.9
	Total	106	100.0
sex	Male	14	15.1
	female	92	84.9
	Total	106	100.0
Address	rural	94	85.8
	urban	12	14.2
	Total	106	100.0
Economic status of family	sufficient	6	5.7
	Insufficient	4	3.8
	somehow sufficient	96	90.6
	Total	106	100.0
Years of employment	1-5	32	30.2
	11-15	13	12.3
	6-10	23	21.7
	15- more	38	35.8
	Total	106	100.0
Religion	Christian	96	96.4
	Muslim	04	3.6
	Others	0	0
	Total	106	100.0

Table 1 show that most of the respondents, their ages were between (41-63years) and 25-31and above. Most of them from rural 85.8% and 90.6% of them testified that financial statuses were somehow sufficient. About 35.8% had worked for 15 years and above in respective employment environments.

Table 2: Distribution of respondents according to their knowledge about communicable disease

S/No	Variables	Valid	Frequency	Percent
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1.	Have you been hearing about communicable diseases?	Yes	72	67.9
		No	34	32.1
		Total	106	100.0
2	Could you give examples of diseases that are communicable?	Measles	22	20.8
		Smallpox	5	4.7
		Chicken pox	26	24.5
		Cholera	11	10.4
		Whooping Cough	9	8.5
		Tuberculosis	5	4.7
		Mumps	24	22.6
		Hepatitis	7	6.6
		HIV	14	13.2
		Flu	21	19.8
		Malaria	1	0.9
		Cancer	7	6.6
		Diabetic	6	5.7
		Asthma	1	0.9
		Hypertension	1	0.9
Psychological disorder	1	0.9		
Thalassemia	4	3.8		

In table 2 above, the result reveals that (68%) of the respondents agreed to have heard about communicable diseases which they identified as flu, measles, chickenpox, HIV, Whooping Cough among others, however, some of these examples were not related to communicable disease. Evidently, the table above strongly indicates that the respondents are aware of communicable diseases and its prevalence in Ayamelum LGA of Anambra State.

Table 3: Knowledge of Respondents on the modes of transmission of communicable disease

S/No	Variables	Valid	Frequency	Percent
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1	Are you aware of the various modes of transmission of communicable diseases	Yes	78	73.6
		No	28	26.4
2	Kindly identify some of these modes of transmission of communicable disease.	Total	106	100.0
		Household items	28	26.4
		Sneezing	5	4.7
		Cough	5	4.7
		Blood	5	4.7
		Kiss	6	5.7
		Respiration	11	10.4
		Cash	3	2.8
		From mother	3	2.8
		Air	15	14.2
		Sexual	5	4.7
		Animal	1	0.9
		Water	5	4.7
Dentist tool	3	2.8		
Foods	5	4.7		
Heredity	3	2.8		
Virus	3	2.8		

Table 3 shows that (26.4%) of the respondents has no or little information about mode of communicable disease while (73.6%) were informed about it. About (26.4%) majorly mentioned that the modes of transmission of communicable disease were by household items and the lowest modes were by dentist tool, which represents (0.9%).

Table 4: Distribution of respondents on their knowledge about the relationship between environment and communicable disease

S/No	Variables	Valid	Frequency	Percent
1	Do you think that there is any relationship between environment and communicable diseases?	Yes	69	65.1
		No	37	34.9
		Total	106	100.0
2	What are the examples of environmental factors that can cause communicable disease?	Respiration	33	31.1
		shaking of hands	20	18.9
		Over Crowding index	17	16.0
		Activities from Factory	12	11.3
		Population explosion	13	12.3
		Relocation	11	10.4

From table 4, the result show that (65.1%) of the respondents knows and agree that there is a relationship between communicable diseases and its environment, and (34.9%) of them believed that the environment has relatively nothing to contribute to communicable diseases. However, about respiration is one of environmental factors that cause communicable disease. However, a total of 31.1% of them believed that

respiration can cause communicable diseases in the environment, while 18.9% believed that shaking of hands contributes to the causes of communicable diseases. The table shows a significant relationship between communicable diseases and environment.

Table 5: Distribution of samples according to respondents' knowledge about risks for transmission

S/No	Variables	Valid	Frequenc y	Percent
1	Are you aware of the various risks for transmitting communicable disease?	Yes	49	46.2
		No	57	53.8
		Total	106	100.0
2	Kindly mention what these risks are?	Disease	18	17.0
		Death	11	10.4
		Epidemic	5	4.7
		Measles	15	14.2

The table shows that (46.2%) had mentioned the risks for transmission of communicable diseases, and they considered disease, measles and death as the major factor risks for communicable disease, but majority of them (53.8%) do not know the risks and other related health implications for transmission of communicable diseases.

Table 6: Distribution of samples according to programs of controlling communicable disease in schools.

S/No	Items	Valid	Frequency	Percentage
1	Do you that some subjects on how to control communicable diseases are necessary to be included in primary school curriculum?	Yes	84	79.2
		No	22	20.8
		Total	106	100.0
2	Do you feel satisfied with introduction of school health programs?	Yes	40	37.7
		No	66	62.3
		Total	106	100.0
3	Have you desired to enter training workshop for teacher science about health promotions?	Yes	85	80.2
		No	21	19.8
		Total	106	100.0
4	Do you usually mention health risks in your subject areas while teaching in the class room?	Yes	79	74.5
		No	27	25.5
		Total	106	100.0
5	Have you any information about your duties as a science teacher is to do some prevention actions during class teaching?	Yes	87	82.1
		No	19	17.9
		Total	106	100.0

Table 6 shows that majority of respondents were positive in their answers relating to the outlined programs for the control of communicable diseases. The respondents were asked if they know of some subjects that are necessary to be included in primary schedule curriculum for controlling communicable diseases, about 79.2% agreed that they know while only about 20.8% said that they were not aware. This shows that respondents are aware that training could improve on people's knowledge about the diseases awareness and control.

Again, while (62.3%) were not satisfied with school health program for controlling communicable disease about 37.7% of them accepted that they were satisfied with the school's programs in the fight against communicable diseases in the study areas.

Table 7: Distribution of samples according to their activity to preventing communicable disease

S/No	Variables	Valid	Frequency	Percent
1	Have you been involved in any activity about prevention of C.D.as your duty in your classroom or homes?	Yes	87	82.1
		No	19	17.9
		Total	106	100.0
2	Mention these activities involved in controlling communicable disease	Personal hygiene	40	37.7
		Hand Washing	24	22.6
		Isolation	16	15.1
		Treatment of disease	12	11.3
		Sexual cautions	1	0.9
		Passenger caution	2	1.9
		Prevention	5	4.7
		Household items control	6	5.7
		Control flies around the house	13	12.3
		Protection from disease	12	11.5
	Proper Counseling	4	3.8	

This table reveals that (82.1%) of the respondents accepted to have been engaged in various activities aimed at controlling and preventing communicable diseases in either their classrooms or at homes while only about 17.9% disagreed to have been involved into such similar activities. Again, from the analysis on the table, the highest were focusing on personal hygiene which represents (37.7%) while the fewer programs were on sexual education which represents (0.9%). This shows that some of the respondents believes that personal hygiene significantly controls the prevalence of communicable diseases and if maintained to a high degree can reduce the effects to the nearest minimal.

4.0 Discussion on Findings

The findings of the study among others revealed that the majority of the respondents were mixed between youth and old age and they have more than (15) years of employment from rural places, their responses regarding most of the items were very poor and disappointing. While (66%) of them posited that they heard about communicable diseases, there are some of them their answers were not related to communicable disease, some believed that hypertension, malaria, cancer, asthma and psychological disorder is considering as communicable disease(table 1,and 2). School teachers are considered the major source of information for their students and would appear to be suitable as health educators (McGovern and Barry, 2000). Teacher's education is considered a major factor in the effective implementation of comprehensive school health.

Table 3 shows that (68.9%) of the participants know the mode of transmission of communicable disease, and (28.3%) believed that the household items such as towels, linen, beds, and tooth brush are the main

significant factors that are responsible for causing the communicable disease and in the less degree are the other factors like air, sneezing, food, water respiration, and sexual intercourse. The majority of the teachers had mixed thoughts between the direct and indirect transmission of the disease because they didn't know what are the major differences (Henry, 2004), and some of the teachers who provided key responses were considering heredity as one of the factors that transmit diseases; which means they lack the appropriate information regarding communicable disease.

Table 4 reveals that the majority of the respondents believed that the environment had the main factors which causes communicable diseases, at the same time their answers about it were not valid, (22.6%) of them believed that respiration is considered one of the most important environmental factors, and few of them considered shaking of hands also as environmental factors causing communicable diseases. At the same time (20.8%) of them were considered overcrowding index as the main indicator for environmental factors that causes communicable diseases. Based on these mixed thoughts, School and health professionals should continue to advocate school- wide policies and programs that support both students and teachers if the goal of an integrated healthy school environment is to be realized (Hessel, 2007). School health services concentrated with the early detection of physical, intellectual and emotional abnormalities in school children and their subsequent treatment and surveillance, it has now been changed to a system of selective examination based on recommendations by teachers (Martin, 2001).

Table 5 shows that the slightly majority of the teacher knows the risks of communicable diseases, (17%) of them believed it cause death, and (14%) of them said it causes other variant diseases, and some of the respondents posits that risks are related to epidemic without really knowing what particular ailment that could cause. This result is not in accordance with a study conducted in Nigeria by Painter, Sales and Pazol, who found that the majority of teachers were unable to know the consequences of not controlling communicable disease in our society (Painter, Sales and Pazol, 2010).

Regarding the program of the schools for the control of communicable diseases, (79.2%) of the respondents believed in the importance of introducing related program and subjects in primary school that could teach the control of communicable disease. Although they were not satisfied with the program submitted by schools already, they suggested introducing special workshop programs for the development of their knowledge which in turn will help in controlling communicable diseases in the schools and their environments. Development efforts by teachers, including training and ongoing reinforcement to increase their sense of preparedness, have significant effects in the classroom (Jansson, 2007). In Nigeria most teachers felt that health education was important and should be an integral part of the curriculum (Kubik, 2002).

Table 7 shows some of the activities put up by the teachers in their classes that enhances control of communicable diseases, the majority of it centered on personal hygiene, instruction to prevent buying from seller rover, use hand washing techniques and procedure for isolation in communicable disease, and there are less focusing on sexual transmission disease. School teacher's perceptions of health, their attitudes and practices and their knowledge of common health problems could be essential factors in optimizing their roles as health educators in society. Many adult behavior patterns and attitudes develop in early childhood. In addition, there is growing acceptance of the need for health education at primary school age (Hausman and Ruzek, 2000).

5.0 Conclusion

The prevalence of communicable diseases and other related intestinal parasitic infection was significant among children of 0-12 years in Ayamelum LGA of Anambra State. The study concludes that there is urgent need to enlighten teachers and equally set up programs that will boost their knowledge about communicable disease.

Majority of the teacher's awareness level were poor and deteriorating from their responses, however, they need continuing education programs about common communicable disease in the study area and ways of preventing them especially within the early stages of growth.

In conclusion, it has been shown that prevalence of communicable diseases and other related intestinal parasites among children of 0-12 years in Ayamelum L.G.A.of Anambra State is high. Public enlightenment, education, provision of good drinking water and water system type of toilet would be good attempts towards eradication of intestinal parasitic infection. To this effect, it could be opined that government and non-governmental organization should take all possible measures towards eradicating these intestinal parasitic infections through relevant programmes and mass chemotherapy.

5.1 Recommendation

Based on the findings of this work, it is hereby recommended as follows: Screening, deworming and health education should necessarily be a component of the primary health care programme with a focus on school children mostly between 0-12 years; an extensive screening programme will make available baseline data

for efficient health programming and disease surveillance. Communicable diseases such as the Intestinal helminthes control programme should embark more on health education, the need for proper disposal of faeces and good toilet facilities. The Federal and State governments should provide pipe-borne water to both rural and urban areas and anti-helminthic drug to the community at large.

Again, in line with afore mentioned, the following recommendations were made by the researcher:

- Encouragement should be given to educational program for both teachers and students, to focus on factors that cause infectious disease and accurate scientific facts, understanding of the environment that affects the spread of the diseases, understanding of the cultural practices influencing health and common communicable diseases and ways of their preventions.
- Teachers and parents should understand that everyone is responsible for prevention of the spread of an infectious disease such as oneself, parents, schools, community members, etc
- Both parents and teachers should express various personal habits and actions that help promote health as well as understanding the importance of accessing reliable health information.
- Educational health packages could be developed with collaboration between ministry of education, ministry of higher education, and health professionals who are fully aware of health problems.

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