

**KNOWLEDGE AND APPLICATION OF PERSONAL HYGIENE AND COMMUNICABLE  
DISEASES AS INDICES OF HEALTH LITERACY AMONG SECONDARY SCHOOL  
STUDENTS IN OGBIA L.G.A OF BAYELSA STATE**

**Dr Joy-Telu Hamilton-Ekeke**

**Department of Science Education, Niger Delta University, Wilberforce Island, Bayelsa State**

**Abstract**

*The study was to determine the level of health literacy of secondary school students in terms of knowledge and application of personal hygiene and communicable diseases as indices of health literacy in making appropriate health decisions. The sample was 206 Senior Secondary three students in Ogbia Local Government Area of Bayelsa State which were randomly selected from a population of 938 SS3 students. Two research questions and two hypotheses were posited for the study. Two instruments were employed in data collection: a test of knowledge questions, which was adapted from past Senior Secondary Certificate Examination question papers, and an application of knowledge questionnaire. Results showed that the mean score of knowledge of personal hygiene was 79.71, while mean score of communicable diseases was 77.30 indicating that participants have good knowledge of personal hygiene and communicable diseases. Also the level of application of the variables under study was shown to be good. The hypotheses were tested using Pearson Product Moment Correlation Coefficient and they both revealed a significant and a no significant relationship between knowledge and application of the variables (personal hygiene and communicable diseases) respectively. Meaning that it is not all that is taught that is being practised. It is then recommended that students should be encouraged to practise more personal hygiene in their daily routine. Also items needed for personal hygiene practice should be provided for the students.*

**Keywords:** personal hygiene, communicable disease, health literacy, secondary school, knowledge, application.

**Introduction**

Health literacy according to Nutbeam (1998) is the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain good health. Other definitions as well as the way the construct has been conceptualized in research are outlined in a good number of studies which include (Adams, Stocks, Wilson, Hill, Gravier, Kickbusch & Beilby, 2009; Adkins & Corus, 2009; Freedman, Bess, Tucker, Boyd, Tuchman & Wallston, 2009. Sorensen, Vender, Fullam, Doyle, Pelikan, Slonska & Brand, 2012), presents a condensed definition of the concept by capturing all its dimensions. Some factors namely competence, skills, abilities; actions; information and other resources, were found to be major

dimensions of the construct. These factors have strong links to people's knowledge, motivation, as well as their abilities and skills to seek, understand, determine the worth, and make use of health information to the extent of preventing disease, and maintaining or improving the quality of life as long as an individual is alive.

Health literacy is an important aspect of health education and health promotion. Health literacy brings about sound and healthy lifestyle among adolescents especially those in the secondary schools, hence the reason why health education curriculum is designed to accommodate very important topics that can promote health literacy. Despite the fact that health education is included in the secondary school curriculum, the attitude towards a healthy lifestyle among secondary school students is not impressive (Hamilton-Ekeke & Diepiribo, 2012). Given that health literacy includes the word 'literacy' many people assume that it is only a concern for those who cannot read but this assumption is incorrect. Health literacy is the degree to which individuals have the capacity to obtain, understand and process basic health information and services needed to make appropriate health decisions (Selden, Zorn, Ratzan, & Parker, 2000). For the purpose of this research work, health literacy will refer to the ability to use health information especially knowledge learnt at the secondary school level to make appropriate health decisions.

Nutbeam (2000) proposed a three-level hierarchy in health literacy namely: basic/functional literacy, interactive literacy and critical literacy. He argues that achieving the level of critical literacy allows for greater autonomy and personal empowerment. This is also an important goal of school education. From a public health perspective, children and young people constitute a core target group for health literacy research and intervention because during childhood and youth, fundamental cognitive, physical, and emotional development processes take place and health related behaviour and skills are developed. As a result, these stages of life are regarded as crucial for healthy development as well as for personal health and well-being throughout adulthood. Moreover, health literacy is understood as a variable construct that is required in the life-long learning process starting in early childhood. Therefore, targeting children and young adults in secondary schools with health literacy intervention can help promote healthy behaviours and ameliorate future health risks. Secondary school health education curriculum comprises the following themes: parts of the human body, physical health, mental health, social health, environmental health, nutrition, disease prevention and control, physical growth and development, drug abuse, reproduction, safety education, personal hygiene, and so forth. This study is targeted at

adolescents in secondary schools to assess their level on health literacy using personal hygiene and communicable diseases as indicators of health literacy. The specific objective of the study is to determine the level of knowledge of personal hygiene as well as communicable diseases and their application among secondary school students.

### **Research questions**

The following research questions were posited for the study

- What is the distribution of scores of students' knowledge of personal hygiene and communicable diseases?
- What is the distribution of scores of application of the knowledge of personal hygiene and communicable diseases?
- What is the relationship between the knowledge of personal hygiene and the application of that knowledge among secondary school students?
- What is the relationship between the knowledge of communicable diseases and the application of that knowledge among secondary school students?

### **Hypotheses**

The following null hypotheses were also formulated for the study:

**Hypothesis 1:** There is no significant relationship between the knowledge of personal hygiene and the application of the knowledge in keeping healthy.

**Hypothesis 2:** There is no significant relationship between the knowledge of communicable diseases and its' application in disease prevention.

### **Method**

The design of the study was a descriptive survey design with a population of 938 Senior Secondary Three(SS3) students from the ten secondary schools in Ogbia LGA. Three schools were randomly selected from the ten schools to make for a representative sample of the population. Two hundred and six SS3 students were randomly selected from three schools, making the sample size of the study. The simple random selection was done by writing the names of the ten schools in the local government area on ten pieces of paper. The papers were shuffled in a bag after which three folded pieces were picked out of three successive shuffles thereby giving all ten secondary schools equal chances of being involved in the research.

Consent was sought from the principals of the three schools. For the sampling of the students in the three schools selected, having been permitted by the principals of the schools, the students were told about the research and that they had the right to participate or decline from participating. The SS3 students in each school were made to pick ballot papers equating their numbers with 'yes' and 'no' options. Those who picked the 'no' options were excluded from the lot while those who picked 'yes' constitute the sample for the school. This was applicable in all SS3 classes of the participating schools. Sixty nine (69) students from each of the sampled schools picked 'yes' making a total of two hundred and seven (207) but one of the student declined participation after picking a 'yes' bringing the total to two hundred and six student (206) ( sixty nine students from two schools and sixty eight from one school).

Two instruments were employed in data collection for the study. Instrument one was test of knowledge questions and instrument two was application questionnaire. The test of knowledge questions was adapted from past West African Senior School Certificate Examinations (WASSCE) and Senior School Certificate Examinations (SSCE). Past questions on the variables under investigation were adapted from the standard national examination bodies with the correct options while the wrong options were constructed by the researcher. The second instrument (instrument two) that was meant to elicit application of knowledge was designed to fit the context of application in line with the test of knowledge questions on instrument one.

The face and content validity of the instruments were validated by two experts in Health Education and it was confirmed valid as the two instruments (knowledge test and application test) measure what they ought to measure. The scheme of work of the schools were also checked to ascertain that, participants have learnt the variables (personal hygiene and communicable diseases) under investigation thereby having considerable knowledge of the variables. The knowledge test instrument was adapted from standardised examination templates but was pilot tested alongside the application test (instrument two) using test-re-test method. A reliability coefficient of  $r = 0.88$  and  $r = 0.81$  was realized for the knowledge test and application test respectively which are within the benchmark of reliable coefficients.

Accompanied by the various class teachers, the researcher told the respondents what the research was, and how to respond to the items. Thereafter, the copies of the questionnaire were issued to the students with ballpoint pens to enable response. The administration and retrieval of the instruments were done during school hours for three days; one day per school. At the point of retrieval, the respondents were thanked and asked to keep the ballpoint pens. The 206 questionnaires retrieved were numbered serially

from 1 to 206, after which the data was entered into IBM SPSS version 22 for analysis.

**Table 1: Mean and Standard Deviation of Scores on the Knowledge of Personal Hygiene and the Knowledge of Communicable Diseases**

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge of personal hygiene	205	17	100	79.71	20.225
Knowledge of communicable diseases	205	14	100	77.30	21.478
Valid N (listwise)	203				

The Table 1 above shows the maximum and minimum scores as well as the mean and standard deviation of scores of the knowledge of personal hygiene and communicable diseases. The mean score for knowledge of personal hygiene was 79.71 and standard deviation of 20.23 while the mean score for communicable diseases was 77.30 and standard deviation of 21.48, indicating that respondents demonstrated a good knowledge of both variables.

**Table 2: Mean and Standard Deviation of Scores on Application of Personal Hygiene Knowledge and Application of Communicable Disease Knowledge**

	N	Minimum	Maximum	Mean	Std. Deviation
Application of personal hygiene	206	23	100	84.44	14.659
Application of communicable diseases	206	33	100	82.67	15.205
Valid N (listwise)	206				

Table 2 above shows the maximum and minimum scores, as well as a high mean score and a high standard deviation on the application of the knowledge of personal hygiene ( $X = 84.44$ ,  $SD = 14.66$ ) and communicable diseases ( $X = 82.67$ ,  $SD = 15.21$ ).

**Table 3: Pearson Product-Moment Correlations Showing the Relationship between knowledge and application of Personal hygiene**

		Application of personal hygiene	Knowledge of personal hygiene
Application of personal hygiene	Pearson Correlation	1	.186**
	Sig. (1-tailed)		.004
	N	206	205
Knowledge of personal hygiene	Pearson Correlation	.186**	1
	Sig. (1-tailed)	.004	
	N	205	205

\*\*  $p < 0.05$  level (1-tailed).

The relationship between knowledge and application of personal hygiene was analysed using Pearson Product-Moment Correlation Coefficient. Preliminary analyses were performed to ensure that the basic assumptions of normality, linearity, and homoscedasticity were not violated. A weak positive relationship between the two variables,  $r = 0.186$ ,  $n = 205$ ,  $p < 0.05$  was observed. Therefore, null hypothesis of there is no significant relation between knowledge and application in terms of personal hygiene was rejected.

**Table 4: Pearson Product -Moment Correlations Showing the Relationship between the knowledge and the application of Communicable Diseases**

		Application of communicable diseases	Knowledge of communicable diseases
Application of communicable diseases	Pearson Correlation	1	.090
	Sig. (1-tailed)		.100
	N	206	205
Knowledge of communicable diseases	Pearson Correlation	.090	1
	Sig. (1-tailed)	.100	
	N	205	205

The relationship between the knowledge of communicable diseases and the application was analysed using Pearson Product Moment Correlation Coefficient. Preliminary analyses were performed to ensure that the basic assumptions of normality, linearity, and homoscedasticity were not violated. There was a very weak positive relationship between the two variables,  $r = 0.090$ ,  $n = 205$ , too weak to say there is a relationship. Therefore, the null hypothesis two of there is no significant relationship between the knowledge of communicable diseases with its application in the prevention of diseases was accepted.

### **Discussion of Results**

As shown in Table 1, the means and standard deviations of scores for ( $n=206$ ) on the knowledge of personal hygiene, the knowledge of communicable diseases indicated that: the means score was 79.71 while the standard deviation was 20.225, meaning that the students have good knowledge of personal hygiene. This is supported by the study conducted in Ile-Ife, Nigeria by Ilesanmi (2017) on personal hygiene among secondary school students. Ilesanmi, (2017) results showed that 98.2% of the students had good knowledge of personal hygiene. In assessing the knowledge of communicable diseases as shown in Table 1, the means score was 77.30 while the standard deviation was 21.478, indicating that they have good knowledge of communicable diseases. This finding is supported by a research conducted on the causes, effect and control of communicable diseases in secondary schools in Oredo Local Government Area of Edo State, shows that the students demonstrated high knowledge of the cause, effect and control of communicable diseases (Iproject, 2018).

As shown in Table 2, the mean score was 84.44 and the standard deviation was 14.659 which indicate that the students show a good attitude or practice of personal hygiene. This is supported by a research carried out on the effect of health education on knowledge, attitude and practices of personal hygiene among secondary school students in rural Sokoto, which shows that, health education intervention impacts on the knowledge base, attitude and practice of the study respondents in the intervention group as compared to the respondents in the control group (Abiola, Nwogu, Ibrahim & Hassan, 2012). Alyssa, Bizu and Michelle (2011) assessed the extent to which proper knowledge of hygiene was associated with personal hygiene characteristics and found that approximately 52% of the students were classified as having adequate knowledge of proper hygiene; 99% of whom reported washing hands before meals. They also added that those with adequate knowledge of proper hygiene were more likely to have clean clothes. Finally, Ilesanmi (2017) found that 98.2% of secondary school students had good knowledge of personal hygiene and could accurately identify the components and some of the harmful consequences

of not engaging in sufficient personal hygiene practices.

As shown in Table 2, on application of communicable diseases knowledge, the mean score was 82.67 and the standard deviation was 15.205, indicating that participants practice what was taught in school. However, this findings contrast with Iproject (2018) findings in Oredo L.G.A in Edo State on the causes, effect, and control of communicable diseases. The result of Iproject (2018) research shows that various communicable diseases exist among the students, meaning that the standard of practice among the students to prevent communicable diseases was not encouraging.

The null hypothesis one of there is no significant relationship between the knowledge of personal hygiene and its application was rejected and the alternate hypothesis of there is a significant relation between the knowledge of personal hygiene and its application was accepted. Although, it was a weak positive correlation ( $r = 0.186$ ). The positive relationship between the two variables (knowledge and application) was supported by Begoray, Wharf, and McDonald (2009). According to Begoray, Wharf, and McDonald (2009), health literacy is linked to two groups of factors namely the learning context and personal characteristics of the students. The learning context within the school includes a comprehensive curriculum, qualified professionals, and quality instructional materials while the personal characteristics of the students such as knowledge, motivation and competence to assess, understand, appraise, and apply health information; all of which have the potentials to explain the result under consideration.

The relationship between the knowledge of communicable diseases and the application was also analysed using Pearson Product Moment Correlation Coefficient. The result revealed a very weak positive relationship between the two variables (knowledge and application). The coefficient was statistically too small to say there is a significant relationship. Therefore, the null hypothesis of 'there is no significant relationship between the knowledge of communicable diseases and the application' was accepted. This can be explained by Nutbeam (2000), who stated that 'even if one assumes that being literate in health at a writing and reading level regardless of if the information is understood by its readers, and delivered via a communication channel that is accepted and easily accessed, there is still no guarantee that the information will be utilized as it was intended'.

### **Conclusion**

Based on the results gotten, the essence of development of health education curriculum in secondary schools especially in Ogbia L.G.A in Bayelsa State was not achieved. This was because health literacy is a totality of knowledge and the application or practice in making appropriate health decisions. The students may have demonstrated good knowledge but did not really translate to practice. If this is not checked the escalating issues of communicable diseases will increase in the lives of adolescents in secondary schools, hence, the health status of the students will be affected and this will in turn affect their academic performance, knowing that a healthy child learns better. Knowledge not translating to practice might be due to several factors including economic factors (i.e. parent not being able to provide/afford items that may help promote personal hygiene and prevent communicable diseases).

### **Recommendations**

Based on the findings of this study, it is therefore recommended that the knowledge of personal hygiene and its application be strengthened by providing what it takes for personal hygiene to thrive. There should also be strong emphasises on the prevention of communicable diseases through improved personal hygiene.

The study is not without limitations. As no human endeavour is carried out without real or imagined shortcomings, this research has areas of input where more is to be desired. Given that one of the study's hypotheses was not supported, the lack of support could be linked to the nature of the construct of health literacy. This may have been because more items may be needed to make up the construct due to the consideration that the sample of items used and the elements that made up the scale may not appropriately represent the knowledge base of the entire students. Subsequent studies should focus on using more variables relating to health literacy, intervening variables like understanding, motivation, attitude, social relationships, economic factors be investigated also. The method of delivery of practical oriented topics related to health literacy can be investigated also.

### References

- Adams, R.J., Stocks, N.P., Wilson, D.H., Hill, C.L., Gravier, S. Kickbusch, I. & Beilby, J.J. (2009). Health literacy – a new concept for general practice? *Australian Family Physician*, 38(3): 144-147
- Abiola, A, Nwogu, E, Ibrahim, M, & Hassan, H, (2012). Effect of health education on knowledge, attitude and practices of personal hygiene among secondary school students in rural Sokoto, North West, Nigeria. *Nigeria Quarterly Journal of Hospital Medicine*, 22(3): 6-12.
- Adkins, N. R., & Corus, C., (2009). Health literacy for improved health outcomes: effective capital in the market place. *Journal of Consumer Affairs*, 43(2):199-222.
- Alyssa, V, Bizu, G, & Michelle, A. (2011). Knowledge, attitude and practice of hygiene among school children in Angolela, Ethiopia. *Journal of Preventive Medicine and Hygiene*, 51(2):73-79
- Begoray, D, Wharf H, & Mcdonald, (2009). High school health curriculum and health literacy. Canadian students' voices, *Global Health Promotion* 16: 35 -42.
- Freedman, D. A., Bess, K. D., Tucker, H. A., Boyd, D. L., Tuchman, A. M., & Wallston, K. A., (2009). Public health literacy defined. *American Journal of Preventive Medicine*, 36(5): 446-541.
- Hamilton-Ekeke, J-T & Diepiribo, A.D.T. (2012). Health education in the school curriculum and entrepreneurship skills, *Educational Research Journals*, 2(9): 292-299
- Ilesanmi, O.T. (2017). Knowledge and practices of personal hygiene among senior secondary school students of Ambassadors College, Ile-Ife, Nigeria. *International Journal of Public Health*, 4(4): 17-25
- Iproject (2018). Causes, effects and control of communicable diseases in secondary schools: a case study of Oredo Local Government Area, Edo State. Available at: <https://iproject.com.ng/education/causes-effects-and-control-of-communicable-diseases-in-secondary-schools/index.html> accessed on the 20th September, 2018
- Nutbeam, D. (2000). Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15(3): 259-267.
- Nutbeam, D., (1998). Health promotion glossary. *Health Promotion International*, 13: 349-364.
- Selden, C, Zorn, M, Ratzan, S. & Parker, R. (2000). Health literacy: January 1990 through 1991. NLM publication North
- Sorensen, K, Vender, B, Fullam, J, Doyle, G, Pelikan, J, Slonska, Z, & Brand, H. (2012). Health literacy and public health literacy and public health a systematic review and integration of definitions and models. *BMC Public Health*, 12(I): 80