HAND WASHING PRACTICES AS CORRELATE TO DISEASE CONTROL AND IMPROVE ACADEMIC PERFORMANCE AMONG PRIMARY SCHOOL PUPILS: IMPLICATIONS FOR EDUCATION

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Abstract

This study examined hand washing practices as correlate to disease control and improve academic performance among primary school pupils. Five research questions guided the study. The design adopted for the study was the descriptive survey. The population of the study consists of all the public primary schools and 863 teachers in Ikorodu, Educational District I1, Lagos State (Lagos State Government Ministry of Education, 2021). Random sampling technique was used to select 18 primary schools out of the available 64 in Ikorodu, Educational District I1, Lagos State while purposive sampling method was utilized in selecting 10 teachers in each of the 18 sampled schools. A total of 180 primary schools' teachers constituted the sample for the study. Questionnaire was the main instrument for data collection. The collected data was analysed using qualitative data analysis approaches which started by editing of the information obtained from the participants. Descriptive statistics, Pearson product-moment correlation and the mean rating were used to analyse the data. The outcome of the study showed that the level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1, Lagos State was moderate. The importance of hand washing practices is numerous and that the attitude of primary school pupils towards hand washing practices was positive. Also, the ideal standards of hand washing practices were acceptable. The analysis revealed that there is a positive correlation between hand washing practice and academic performance of primary school pupils. Conclusion was drawn as useful recommendations were made which include among others that teachers, school proprietors and principals should inculcate the knowledge and practice of hand hygiene in pupils.

Keywords: ***Hand washing practices, primary school pupils, disease control, academic performance***

Introduction

Standard of children health is a measure of the health of every country, including Nigeria. The unrestrained spread of infection diseases has been a problem of children of primary school-age. It is widely acknowledged that regular hand washing has been the most effective means of combating the spread of infectious diseases, but the practice is often inconsistent among school-age children.

Hand hygiene is a general term that applies to hand washing, antiseptic hand washing, alcohol-based hand rub or surgical hygiene/antiseptic (Uneke, Ndukwe,

Oyibo, Nwakpu, Nnabu & Prasopa-Plaizier, 2014). It is the act of cleaning hands for the purpose of removing soil, dirt, and microorganisms. It remains the most sensible, simplest, largely cost effective and affordable means of preventing communicable diseases in developing countries. Hand hygiene is a significant lifetime habit for one to stay healthy and a way that can reduce the risk of being infected with colds, flu, other respiratory viruses, gastrointestinal illness etc. Hand washing, either with soap and water or by using hand sanitizer may seem like a little action, but it has a noteworthy impact on our health.

Hand washing is especially imperative for children, as they are the most vulnerable to infections from unwashed hands. Many infections start when hands are contaminated with disease causing organisms. This can happen after using the toilet, coughing or blowing of nose, playing, handling garbage and touching other contaminated surfaces. Most diseases like colds, flu, Covid-19, diarrhoea and pneumonia can be transmitted by contaminated hands

Cleaning of hands not only helps prevent persons from catching germs, but from spreading them to others. According to the Centres for Disease Control and Prevention (CDC, 2015), washing hands could protect about 1 of 3 young children who get sick with diarrhoea and 1 of 5 young children with respiratory infections like pneumonia.

Elementary children are particularly vulnerable to infections. When kids come into contact with germs, they can unknowingly become infected simply by touching their eyes, nose, or mouth. Moreover, once they are infected, it is usually just a matter of time before the whole family comes down with the same illness. Whereas hand washing is the best method of preventing infections, several elementary schools are accommodated in structures that lack means for effective hand hygiene.

Centres for Diseases Control (CDC*)* stated that 160 million school days are lost each year due to infectious illness (Vital Health and Statistics, 2020). Here in Nigeria, over 10,000 Nigerian children die each year from diarrhoea and pneumonia. If this continues, Nigeria may not be able to achieve the sustainable development goal 3 and its targets on child mortality by 2030. Hand washing with soap alone could reduce diarrhoea and the possibility of contracting Covid-19 by 85% and pneumonia by 25%, yet only 20% of Nigerians wash their hands with soap. The awareness level about the hand washing practice remains low with hand washing rate growth of 8% over the last three years (Vital Health and Statistics, 2020). Thousands of lives could be saved if hand washing with soap becomes a habit for everyone in Nigeria.
(UNICEF, 2018).

Prater (2016) linked poor hand hygiene practices to increased occurrences of infectious diseases, medical visits and absence from class and work. Teaching children appropriate hand hygiene habits can result in the decrease of infections, absenteeism, and associated costs. Teachers, parents, and classmates' attitudes significantly influence hand washing and hygiene behaviours among students (Dajaan Addo & Ojo (2018); Sun, Wang & Poudel (2019); Tidwell., Gopalakrishnan. & Unni., 2020). Many experts agree that for hand hygiene practice to be effective in changing behaviours, we need to ensure a family-centred approach (Scott, 2010; Poudel., et al. (2019)), starting with the home and reinforced in the classroom, community and through popular media. Hand

washing is considered an efficient preventive measure for children, with a subsequent reduction in child antibiotic use (Dean, 2017). Generally, hospital-acquired infections can be decreased by the very simple but crucial intervention of hand washing (Tyagi, Barwal & Semmelweis, 2020).

Several studies have been conducted to investigate the issues regarding hand washing and general hygiene by students. Hand washing, especially after visiting bathrooms, has a significant effect on the spread of parasitic infections, with increased cases of the latter present among school children in many countries (Hailegebriel, 2018). Nevertheless, students' hygiene knowledge, attitudes, and practices have shown significant discrepancies between genders (Gebreeyessus & Adem, 2018). Many researchers have observed low compliance to standards of hand washing globally even with availability of soap and water (Uneke, Ndukwe, Oyibo, Nwakpu, Nnabu & Prasopa-Plaizier, 2014; Azuogu, Ilo, Nwimo, Azuogu & Onwunaka, 2016). Azuogu, et al. (2016) conducted a study on extent of hand washing practice among school children in Ebonyi State and found that there is a statistically significant relationship between school-based hand washing practice and students' health.

The relationship between pupils' health and academic success is complex. Research shows a strong connection between healthy behaviours and academic achievement (e.g., grades, standardized tests, graduation rates, attendance) (Busch, Loyen, Lodder, Schrijvers, van Yperen &, de Leeuw; 2014; Hawkins, Lee, Michael, Mer, Lee, King, Rasberry, Underwood. Michael, Merlo, Basch, Wentzel & Wechsler. 2017; Liburd, 2019; Hahn & Truman, 2015). Students with poor health have a higher probability of school failure, grade retention, and dropout (Steven, 2015), therefore, improving a child's physical health has the potential to be a valuable protective factor in the improvement of academic performance (Roberts, Freed, & McCarthy, 2010; Telford et al., 2012). Healthy students are better learners, and academic achievement bears a lifetime of benefits for health. Recent research illustrates that higher academic grades are associated with more positive individual and cumulative health behaviours among students (National Academies of Sciences, Engineering, and Medicine, 2020).

Bennell (2012) argued that since school children in developing countries account for up to half of the population, promotion of these good hygiene and hand washing practice is not only necessary but also extremely relevant. It is against this background that this study became inevitable, to examine hand washing practices as correlate to disease control and improve academic performance among primary school pupils in Ikorodu, Educational District I1 of Lagos State.

Statement of the Problem

Cleanliness is indeed next to better health. Despite this saying, most of the primary school pupils are still not conscious of the need of personal hygiene in their environment and health. It is evidence that countable number of infectious diseases evolve as a result of poor environmental management, poor personal hygiene and poor knowledge of hand washing practices.

The researcher observed that good number of primary school pupils in Ikorodu, Educational District I1 lack adequate knowledge of hand washing habit and do not have appropriate hand washing facilities. Poor practice of hand hygiene has resulted in diseases infection, absenteeism from school, low academic achievement, low standard of education, school dropout among others. It is against this backdrop that this study

examines hand washing practices as correlate to disease control and improve academic performance among primary school pupils.

Purpose of the Study

The study examined hand washing practices as correlate to disease control and improve academic performance among primary school pupils. Specifically, the study intends to:

1. Examine the level of awareness of hand hygiene among Primary school pupils in Ikorodu, Educational District I1 of Lagos State.
2. Determine the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State?
3. Explain the attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State
4. Evaluate the ideal standards of hand washing practices for primary school pupils in Ikorodu, Educational District I1 of Lagos State
5. Assess the relationship between hand washing practice and academic performance of primary school pupils

Research Questions

1. What is level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1 of Lagos State?
2. What is the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State?
3. What is the attitude of primary school pupils towards hand washing practices among in Ikorodu, Educational District I1 of Lagos State?
4. What are the ideal standards of hand washing practices for primary school pupils in Ikorodu, Educational District I1 of Lagos State?
5. How does hand washing practice relate to the academic performance of primary school pupils

Method

This study adopted the descriptive survey research design as it enables the researcher to identify and classify of the elements or characteristics of the subject and to systematically gather data directly from the respondents through the use research tools. The population of the study consists of all the public primary schools and 863 teachers in Ikorodu, Educational District I1, Lagos State (Lagos State Government Ministry of Education, 2021). Random sampling technique was used to select 18 primary schools out of the available 64 in Ikorodu, Educational District I1, Lagos State while purposive sampling method was utilized in selecting 10 teachers in each of the 18 sampled schools. A total of 180 primary schools' teachers constituted the sample for the study. This sample size is adequate because according to Asika (1991), 10% element selected randomly from a population is to all intents and purposes deemed to be representative of the population and the findings from a study of that sample can be generalized for the population

The instrument for the study was a self-structured questionnaire titled: Hand Washing Practices as Correlate to Disease Control and Improve Academic Performance Scale (HWPCDCIAP). The questionnaire was divided into six sections A-F Section A contains personal data while Section B consists of 10 items on the level of awareness of hand hygiene among primary school pupils. Section C was concerned with the

importance of hand washing practices among primary school pupils, Section D laid emphasis on the attitude of primary school pupils towards hand washing practices, Section E relates to issues on the ideal standards of hand washing practices while Section F sought information on the relationship between hand washing practice and academic performance of primary school pupils. The researcher adopted a 4-likert type scale categorised into Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

Validation of the Instrument

The instrument was validated by two experts in Department of Educational Foundation, National Open University. The essence of the validity of the questionnaire was to ensure that the items satisfied the face and content validity.

The reliability of the instrument was determined by administering it on a sample of 30 primary school teachers in Apapa Local Government Area of Lagos State, which was not part of the domiciled population. Based on the data obtained from the respondents, the reliability was calculated using Cronbach's Alpha which gave the reliability scale of 0.84, which was deemed adequate for the study.

Method of Data Collection and Data Analysis

The questionnaires were administered by the researcher who first visited the school heads and sought for permission to administer the questionnaire to respondents. Respondents were made to answer the questionnaires during break periods in order not to interrupt class lessons. 180 respondents were administered with the instrument and 161 were retrieved, thereby constituting 89% success.

The collected data was analysed using qualitative data analysis approaches which started by editing of the information obtained from the participants. Descriptive statistics, Pearson product-moment correlation and the mean rating were used to analyse the data.

Results

Answer to research Questions

What is level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1 of Lagos State?

Table 1: Mean rating on the level of hand washing habits practices as disease control measures among primary school pupils in Ikorodu, Educational District I1 of Lagos State

S/N	Level of hand washing habits knowledge	N	Sum	Mean	Std. Dev.	Remark
Q1	I have heard learn much about hand washing habits in the school.	161	486.00	3.02	.44	Agreed
Q2	I was thought about hand washing practices informally	161	507.00	3.15	.35	Agreed
Q3	I have gotten information about hand washing behaviour in books	161	509.00	3.16	.36	Agreed
Q4	I got my information about hand washing habits from teachers	161	503.00	3.12	.37	Agreed
Q5	I heard about hand washing habits at home from my parents	161	508.00	3.16	.38	Agreed
Q6	I heard about hand washing habits from peers	161	504.00	3.13	.37	Agreed
Q7	I have gotten information about hand washing behaviour by reading magazines	161	500.00	3.11	.36	Agreed
Q8	I have obtained information about hand washing behaviour in television	161	496.00	3.08	.33	Agreed
Q9	I have adequate knowledge about hand washing habits	161	492.00	3.06	.34	Agreed
Q10	I always have the feeling of hand washing after events	161	457.00	2.84	.68	Agreed
	Total	1610	4962	3.08	.36	Agreed

Table 1 revealed mean rating on the level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1 of Lagos State. I heard about and washing habits at home from my parents and I have gotten information about hand washing behaviour in books top the list with mean of 3.16. Next was I was thought about hand washing practices informally (3.15), followed by I heard about hand washing habits from peers (3.13), and closely by I have gotten information about hand washing behaviour by reading magazines (3.11). The least is I always have the feeling of hand washing after events as indicated in the table was a lower mean score of 2.84. The total average is 3.08, which is above the weigh average of 2.5. The implication is that the level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1, Lagos State is moderate.

Research Question 2: What is the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State?

Table 2: Descriptive statistic on the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State

S/N	Importance of hand washing practices	N	Sum	Mean	Std. Dev.	Remark
Q11	Hand washing practices help to prevent disease infections	161	481.00	2.99	.51	Agreed
Q12	Hand washing practices help cultivate cleanliness	161	508.00	3.16	.36	Agreed
Q13	Hand washing reduces hospital bills	161	511.00	3.17	.38	Agreed
Q14	Cleaning your hands prevent you from spreading germs to others	161	458.00	2.84	.61	Agreed
Q15	Hand washing practices inculcates ideal behaviour	161	478.00	2.97	.48	Agreed
Q16	Hand washing practices guarantee proper physical development	161	454.00	2.82	.64	Agreed
Q17	Hand washing practices prevent foul odour	161	472.00	2.93	.52	Agreed
Q18	Hand washing practices encourages good hygiene culture	161	490.00	3.04	.42	Agreed
Q19	Hand washing propagates safe environment	161	475.00	2.95	.43	Agreed
Q20	Hand washing improves individual outlook	161	452.00	2.81	.55	Agreed
Total		1610	4779	2.97	.49	Agreed

Table 2 above is a descriptive statistic on the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State. The analysis revealed a total of 4779, a mean average of 2.97 and a standard deviation value of 0.39. The mean average of 2.97is above the bench mean of 2.5. The implication is that the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1, Lagos State are numerous.

Research Question 3: What is the attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State?

Table 3: Descriptive statistic on the attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State

S/N	Attitude towards hand washing practices	N	Sum	Mean	Std. Dev.	Remark
Q21	I am usually concerned about my hand washing behaviour	161	448.00	2.78	.57	Agreed
Q22	I like to wash my hands after every manual activity	161	483.00	3.00	.44	Agreed
Q23	Hand washing practices is practiced both in and outside the school	161	485.00	3.01	.35	Agreed
Q24	I always encourage washing hands with soap and water	161	495.00	3.07	.39	Agreed
Q25	The practice of hand washing a vital for everyone	161	486.00	3.02	.49	Agreed
Q26	I value the information I receive about hand washing practices from my teachers	161	447.00	2.78	.62	Agreed
Q27	I often encourage other students to regularly wash their hands.	161	478.00	2.97	.47	Agreed
Q28	My feelings about hand washing is positive	161	454.00	2.82	.64	Agreed
Q29	I am eager to obtain more information about hand washing	161	472.00	2.93	.52	Agreed
Q30	I do not neglect my hands principles	161	490.00	3.04	.42	Agreed
	Total	161	4738	2.94	.48	Agreed

Table 3 revealed mean rating on the attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State. I always encourage washing hands with soap and water top the list with mean of 3.07. Next was I do not neglect my hands principles l (3.04), followed by the practice of hand washing a vital for everyone (3.02), and closely by hand washing practices is practiced both in and outside the school (3.01). The least is: I value the information I receive about hand washing practices from my teachers as indicated in the Table was a lower mean score of 2.78. The total average is 2.94, which is above the weigh average of 2.5. The implication is that the attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State is positive.

Research Question 4: What are the ideal standards of hand washing practices for Primary school pupils in Ikorodu, Educational District I1 of Lagos State?

Table 4: Descriptive statistic the ideal standards of hand washing practices for Primary school pupils in Ikorodu, Educational District I1 of Lagos State

S/N	Ideal standards of hand washing practices	N	Sum	Mean	Std. Dev.	Remark
Q31	Dry your hands using a paper towel or shake them dry.	161	481.00	2.99	.60	Agreed
Q32	Hand washing before and after eating	161	461.00	2.86	.46	Agreed
Q33	Hand washing is done regularly after play	161	487.00	3.02	.35	Agreed
Q34	Hand washing, especially after visiting bathrooms	161	501.00	3.11	.31	Agreed
Q35	Hand washing is done as a daily routine	161	449.00	2.79	.54	Agreed
Q36	Scrub all surfaces of the hands, including between the fingers, vigorously for at least 20 seconds.	161	493.00	3.06	.24	Agreed
Q37	Dispense soap into the palm of one hand.	161	495.00	3.07	.30	Agreed
Q38	Rub your hands together to make lather for at least 15 seconds	161	489.00	3.04	.24	Agreed
Q39	Rinse your hands under well under running water	161	489.00	3.04	.29	Agreed
Q40	Dry hands with paper towel and discard.	161	493.00	3.06	.63	Agreed
Total		1610	4838	3.00	.40	Agreed

Table 4 above is a descriptive statistic on ideal standards of hand washing practices for Primary school pupils in Ikorodu, Educational District I1 of Lagos State. The analysis revealed a total of 4838, a mean average of 3.00 and a standard deviation value of 0.40. The mean average of 3.00 is above the bench mean of 2.5. The implication is that the ideal standard of hand washing practices for primary school pupils in Ikorodu, Educational District I1, Lagos State is acceptable.

Research Question 5: How does hand washing practice relate to the academic performance of primary school pupils

Table 5
A Pearson product-moment correlation on the relationship between hand washing practice and academic performance of primary school pupils

		Designation	Schools status
Hand Washing Practice	Pearson Correlation	1	-.057
	Sig. (2-tailed)		.487
	N	150	161
Academic Performance	Pearson Correlation	-.057	1
	Sig. (2-tailed)	.487	
	N	150	161

A Pearson product-moment correlation was run to determine the relationship between hand washing practice and academic performance of primary school pupils. The analysis revealed a positive correlation between hand washing practice and academic performance of primary school pupils, which was statistically significant (r = .487, n = 50, p = .005). The implication is that there is a positive correlation between hand washing practice and academic performance of primary school pupils.

Discussion of Findings

Research question 1 sought to know the level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1 of Lagos State. The study revealed that level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1, Lagos State is moderate. The finding agrees with Azuogu, et al. (2016) who established a statistically significant relationship between school-based hand washing practice and students' health in Ebonyi State.

Research question 2 sought to know the importance of hand washing practices among primary school pupils in Ikorodu, Educational District I1 of Lagos State? Finding from the study showed that the hand washing practices among primary school pupils in Ikorodu, Educational District I1, Lagos State is numerous' According to the Centres for Disease Control and Prevention (CDC, 2015), washing hands could protect about 1 of 3 young children who get sick with diarrhoea and 1 of 5 young children with respiratory infections like pneumonia.

Research question 3 states: What is the attitude attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1 of Lagos State? Finding from the study showed that the attitude attitude of primary school pupils towards hand washing practices in Ikorodu, Educational District I1, Lagos State is positive. This outcome contradicted the finding of Uneke, Ndukwe, Oyibo, Nwakpu, Nnabu & Prasopa-Plaizier (2014) who observed low compliance to standards of hand washing among children even with availability of soap and water; worst still even among medical professionals.

Research question 4 sought to establish the ideal standards of hand washing practices for primary school pupils in Ikorodu, Educational District I1 of Lagos State? As shown in the analysis, the ideal standards of hand washing practices for Primary school pupils in Ikorodu, Educational District I1, Lagos State are acceptable. This conclusion agreed with Hailegebriel (2018) who stated that hand washing, especially after visiting bathrooms, has a significant effect on the spread of parasitic infections, with increased cases of the latter present among school students in many countries.

Research question 5 sought to the relationship between hand washing practice and academic performance of primary school pupils. The analysis revealed that there is a positive correlation between hand washing practice and academic performance of primary school pupils. This conclusion correlates with the finding of Steven (2015) who established that students with poor health have a higher probability of school failure, grade retention, and dropout. Therefore, improving a child's physical health has the potential to be a valuable protective factor in the improvement of academic performance (Roberts, Freed, & McCarthy, 2010; Telford et al., 2012). Recent research illustrates that higher academic grades are associated with more positive individual and cumulative health behaviours among students (National Academies of Sciences, Engineering, and Medicine, 2020).

Implication to Education

Strict adherence to the outcomes and recommendations of this study would go a long way to improve education, the societies and students school attendance and achievements. It would help learners to avert the frequent cases of disease infections,

reduce absenteeism, invigorate physical and mental activities and enhance academic prowess. It is therefore critical to promote education on proper hand washing in schools and at home to improve health and learning outcomes.

Conclusion

The outcome of the study showed that the level of awareness of hand washing practices as disease control measures among primary school pupils in Ikorodu, Educational District I1, Lagos State was moderate. The importance of hand washing practices is numerous and that the attitude of primary school pupils towards hand washing practices was positive. Also**,** the ideal standards of hand washing practices were acceptable. The analysis revealed that there is a positive correlation between hand washing practice and academic performance of primary school pupils However, teachers, school proprietors and principals should inculcate the knowledge and practice of hand hygiene to pupils in the schools.

Recommendations

1. Teachers, school proprietors and principals should inculcate the knowledge and practice of hand hygiene to pupils in the schools. They should be able to identify the various causes of poor hygiene in school and make effort to curb them.
2. Teachers, school proprietors and principals should be thought about the impact of practice of hand hygiene on the health status and academic performance of pupils.
3. Lagos state government should introduce rules and regulation to encourage hand washing practices and curb the rising trend of poor hygiene in schools.
4. Teachers, school proprietors and principals should help pupils adopt the ideal standards of hand washing practices in the school and at home.

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