



## Hand Washing Behaviour among Children in Northern Nigeria

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### ABSTRACT

This study was to assess the attitude of hand washing behaviour among school children otherwise known as pupils with special reference to Kaduna State in Northern Nigeria. The study employed ex-post factor Research design. The population comprises of all public and private primary school pupils in Kaduna state which give a total of one million two hundred and ninety three thousand six hundred and twenty six (1,293,526). Stratified random sampling technique was used to stratified the state in three senatorial districts and two local governments from each senatorial district were selected using simple random sampling while proportional sampling was used in selecting the respondents. Sample of seven hundred and sixty (760) copies of questionnaire was used for data analysis. The frequencies and sample percentage was used for the demographic characteristics of the respondents while descriptive statistics which comprises of mean and standard deviation was used for the research questions answered. The formulated hypotheses analysed was inferential statistics t- test statistics and were tested at 0.05 alpha level of significance. The findings revealed that the attitude of hand washing behaviour among primary school pupils were significant. It was recommended that the school authority should further encourage the improvement of the attitude of primary school pupils towards hand washing after visiting the toilet, before and after eating or and their normal activities through further enlightenment programmes.

**Keywords:** Hand washing, school, Pupils, Kaduna, Nigeria

### INTRODUCTION

Globally, infectious diseases remain leading causes of childhood morbidity and mortality accounting for 64% of all deaths in children fewer than 5 years of age. Pneumonia and diarrhoea account for a third of all deaths. In Nigeria, the under-five mortality rate is 157/1000 live births and child mortality rate is 75/1000 live births. Diarrhoea is responsible for 19% of all childhood mortality and pneumonia for 16%. For Nigeria to attain its 4th Millennium Development Goal, it has to reduce its under-five mortality rates to 40/1000 live births by 2015. UNICEF, (2008) stated that, the strategies that will significantly reduce diarrheal and respiratory diseases will have a positive impact on the attainment of the country's targets. Across all indicators of health, children from poorest neighbourhoods fare worse than those from the wealthiest socioeconomic strata. For example the under-five mortality rate in Nigeria for children from the highest socioeconomic group is 87/1000 while those in the lowest economic group have a mortality rate of 219/1000 live births. Children from poor, overcrowded slums fall into the lowest socioeconomic groups and are therefore more vulnerable to infections including diarrhoea and respiratory tract infections (Afifi, Dueger, El- Ashry, El- Sayed, Kandeel, Marfn, Mohareb and Talaat, 2011).

Baxter and Cleary(2002) asserted that, hand hygiene is important in primary schools to prevent the spread of infectious illnesses and is a key to infection control measure recommended during pandemic influenza. Improving hand washing/ hygiene to lower the transmission of infections could potentially prevent secondary infections in a wider community, reduce health service costs and also lower the burden on families, some of whom may need to take time off work to care for children. Driessnack (2005), conducted Meta- analysis which have shown that hand washing educational interventions, particularly the use of non – antibacterial soap with education, can be effective in

preventing gastrointestinal and respiratory illness, although this review was not focused specially on primary school settings. However, this review and two others focusing on developing countries, have drawn attention to the lack of rigorously conducted randomised controlled trials (RCTs) to evaluate the effectiveness of hand washing interventions in preventing the spread of respiratory and gastrointestinal infections (Health Protection Agency, 2005).

### Research Hypotheses

The following hypotheses were formulated for the purpose of this study and tested at, 0.05 significant levels.

There is no significant difference between private and public primary school pupils in their Attitude of hand washing behaviour. There is no significant difference between primary school boys and girls in their Attitude of hand washing behaviour in Kaduna state.

### METHODOLOGY

The research design used for this study was ex-post facto research design. Ex post facto design is a non-experimental research technique in which pre-existing groups are compared on dependent variable; it does not involve any form of manipulation or measurement before the fact occurs (Lammers and Badia, 2005).

The target population of this study comprises of all public and private primary schools pupils in Kaduna State. According to Kaduna State Universal Basic Education Board (2014), there are four thousand two hundred and twenty five (4225) public primary schools in the state, with a total number of one million one hundred and fifty three thousand four hundred and sixty (1,153,460) students from the three (3) existing senatorial districts of the state. Also, according to Kaduna state Annual school census Report (2010), stated that the number of private primary schools was nine hundred and seventy four (974) with total number

of one hundred and forty thousand and sixty six (140,066) pupils. For the purpose of this study, stratified random, simple random sampling, and proportional sampling technique was used. The first stage involved the use of stratified random sampling technique where the primary schools in Kaduna State was stratified into three (3) senatorial districts which are northern senatorial district with eight (8) local government areas, central senatorial district with seven (7) local government areas and southern senatorial district with eight (8) local government areas. The second stage involved the use of simple random sampling technique using hat drawn method. In this method, the names of all local governments in each senatorial district were written on a piece of paper, fold and placed in a container, shuffled it, and the selection was made to select two local governments from each senatorial district (Sabon Gari and Ikara Local Government from Zone one, Giwa and

Kaduna north Local Government from Zone two, Kaura and Jema'a Local Government from Zone three). The third stage also involved the use of proportional sampling techniques to select the respondents (pupils from public and private primary schools in Kaduna state). According to Morgan and Kreycie (1960) to determine sample size from a given population, sample size of 384 will be adequate in a given one million population. The sample size for this study was three hundred and eighty (380) each, which covers the six (6) selected public and private primary schools of the three senatorial districts of the state each.

For the purpose of analyzing the data collected, the following statistical techniques were used. Descriptive statistics was used to determine frequency and percentages for the demographic characteristics of the respondents; One sample t-test and independent t-test was used to analyze the formulated hypotheses at 0.05 alpha level of significance.

## RESULTS

**Table 1:** Demographic Characteristics of the Respondents

	Variable	Frequency	Percentage
School type	Private	380	51.1
	Public	365	48.9
	Total	745	100.0
Gender	Male	422	56.6
	Female	323	43.4
	Total	745	100.0
Class level	Primary Four	301	40.4
	Primary Five	213	28.6
	Primary Six	231	31.0
	Total	745	100.0

Table 1 above shows demographic characteristics of the respondents, 380(51.1%) of the respondents were students from private school while 365 (48.9%) of the respondents were students from public school. With regards to gender, the table further reveals that majority of the respondents 422 (56.6%) of the respondents were male while 323 (43.4%) of the respondents were female. Table 4.1 also shows that the

class level of the respondents, 301 (40.4%) of the respondents were primary four pupils, 213 (28.6%) of the respondents were primary five pupils while 231 (31.0%) of the respondents were primary six pupils.

Hypothesis one: The attitude of primary school pupils towards hand washing is not significant.

**Table 2:** One sample t-test analysis of attitude of primary school pupils towards hand washing

Variables	Mean	Std. Deviation	t-value	df	P-value
Actual mean	2.3245	5.1732	2.770	744	0.011
Constant mean	2.0000	0.00			

$t(744) = 1.972$ ,  $P \text{ value} < 0.05$

From the above result of analysis presented, it shows that the probability value is less than 0.05 level of significance. The t-value value 2.770 is greater than the t-critical is 1.972 at degree of freedom 744 using two tailed significant level. The null hypothesis which states that "the attitude of primary school pupils towards hand washing is not significant" is therefore rejected that there is significant differences in their

attitude of hand washing behaviour among primary pupils in Kaduna State.

**Hypothesis two:** There is no significant difference between primary school boys and girls in their attitude of hand washing behaviour in Kaduna state.

**Table 3:** Summary of Independent t-test statistics on difference between primary school boys and girls in their attitude of hand washing behaviour

	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Df</i>	<i>t</i>	<i>Sig(p)</i>
Attitude of Hand washing Behaviour	Boys	422	37.8491	7.8132	744	3.701	0.002
	Girls	323	32.8159	5.1176			

$t(744) = 1.972$ , P value < 0.05

Results of the independent t-test statistic showed that there is significant difference between primary school boys and girls in their attitude of hand washing behaviour. This was because the calculated p value of 0.001 is lower than the 0.05 alpha level of significance, while the calculated t value of 3.701 is lower than the 1.972 t critical at df 744. Therefore, the null hypothesis which states that there is no significant difference between primary school boys and girls in their attitude of hand washing behaviour in Kaduna State, thus was rejected.

## DISCUSSION

Null Hypothesis one stated that the attitude of primary school pupils towards hand washing is not significant. One sample t test was used to test the hypothesis. The result of the test reveals that t-value is 2.770 and the t-critical is 1.972 at 0.011 level of significance with 744 as the degree of freedom. The null hypothesis was therefore rejected that the attitude of primary school pupils towards hand washing is significant. This finding is consistent with Curtis and Cairncross (2003) that hand washing, if regularly and properly practiced by primary school pupils will go a long way in reducing the prevalence of infectious diseases, hospital admissions due to these diseases and also mortality, thereby making them grow well and healthy. This coupled with poor attitude and practice of simple hygiene increase the risk of spread of diseases to the primary school pupils (especially under five year old children) who by reason of their poorly developed immune system are particularly vulnerable to these diseases. Some critical times at which hand-washing must be employed include, after using the toilet, attending to a sick person, handling raw meat, fish or poultry, after handling garbage, treating a wound or cut, contact with domestic animals, before food preparation and before eating (CDC, 2009).

In Nigeria like other African countries, the people are particularly guided by culture. This coupled with poor attitude and practice of simple hygiene increase the risk of spread of diseases to the primary school pupils (especially under five year old children) who by reason of their poorly developed immune system are particularly vulnerable to these diseases. Some critical times at which hand-washing must be employed include, after using the toilet, attending to a sick person, handling raw meat, fish or poultry, after handling garbage, treating a wound or cut, contact with domestic animals, before food preparation and before eating (CDC, 2009). Hygienic measures, including hand washing with soap before meals and after use of restrooms, have been found to prevent diseases (WHO, 2012). Hand washing, if regularly and properly practiced by primary school pupils will go a long way in reducing the prevalence of infectious diseases, hospital admissions due to these diseases and also mortality, thereby making them grow well and healthy (Curtis and Cairncross, 2003).

## RECOMMENDATIONS

- 1) Governments, school authorities and Non Governmental Organisations (NGOs) should try and make some posters on hand washing that people can see and learn from it to further awake the public primary schools about their hand washing behaviour.
- 2) Schools and media should be having some workshop and program in order to remind and motivate the public primary schools about their hand washing practices through their teachers and parents.

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