

EFFECT OF A HEALTH EDUCATION INTERVENTION PROGRAMME ON PRACTICE OF PERSONAL HYGIENE AMONG BASIC SECONDARY SCHOOL STUDENTS IN ABUJA NIGERIA

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ABSTRACT

The study was to Poor personal hygiene among school-aged children remains a public health concern because it contributes to the spread of communicable diseases and negatively affects students' health and academic performance. This study assessed the effect of a health education intervention programme on personal hygiene practices among basic secondary school students in Abuja, Nigeria. A quasi-experimental pre-test and post-test control group design was adopted for the study. The population comprised 133,055 basic secondary school students in Abuja, Nigeria. A sample of 100 students was selected using a multistage sampling procedure involving purposive and simple random sampling techniques. Fifty students were assigned to the experimental group, while fifty students constituted the control group. Data were collected using a structured questionnaire administered before and after the intervention. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to analyse the data, while paired-sample t-test and independent-sample t-test were used to test the hypotheses at the 0.05 level of significance. The findings revealed a significant improvement in personal hygiene practices among students in the experimental group following the health education intervention ($t = 60.56$, $p = 0.001$). The study also found a significant difference in post-intervention personal hygiene practice scores between the experimental and control groups ($t = 5.631$, $p = 0.003$), indicating that students who received the intervention demonstrated better hygiene practices than those who did not. The study concluded that the health education intervention programme was effective in improving personal hygiene practices among basic secondary school students in Abuja, Nigeria. Based on the findings, it was recommended that health educators should utilize school health clubs, posters, and other school-based communication channels to promote good hygiene practices. In addition, government agencies, non-governmental organizations, and other stakeholders should provide schools with adequate hygiene facilities and materials, including clean water, soap, handwashing stations, and sanitation equipment, to support and sustain positive hygiene behaviours among students.

Keywords: Health education intervention, personal hygiene practice, basic secondary school students,

Introduction

Personal hygiene is a fundamental component of health promotion and disease prevention. It refers to the practices individuals adopt to maintain cleanliness and promote physical well-being, including regular handwashing, bathing, oral care, proper grooming, and environmental sanitation. Good personal hygiene helps prevent the transmission of communicable diseases and contributes to improved physical, psychological, and social well-being. According to the World Health Organization (WHO, 2023), maintaining appropriate hygiene practices is one of the most effective and cost-efficient methods of preventing infectious diseases and promoting overall health.

Globally, poor personal hygiene remains a major public health concern, particularly among school-aged children and adolescents. Inadequate hygiene practices contribute significantly to the spread of communicable diseases such as diarrhea, cholera, respiratory tract infections, and skin diseases. The annual celebration of Global Handwashing Day highlights the importance of hand hygiene as a simple but effective strategy for reducing disease transmission. Despite growing awareness of hygiene-related health risks, many young people continue to exhibit poor hygiene practices due to inadequate knowledge, lack of access to hygiene facilities, and insufficient health education programmes (WHO, 2019).

In sub-Saharan Africa, the challenge of maintaining good personal hygiene is compounded by limited access to clean water, sanitation facilities, and hygiene education. The United Nations Children's Fund (UNICEF, 2020) reported that many schools in the region lack adequate water, sanitation, and hygiene (WASH) facilities, making it difficult for students to practice proper hygiene. Consequently, school-aged children remain vulnerable to hygiene-related illnesses that negatively affect their health, school attendance, and academic performance.

Nigeria faces similar challenges regarding personal hygiene among adolescents. Studies have shown that inadequate sanitation facilities, poor access to clean water, limited availability of hygiene materials, and insufficient health education contribute to poor hygiene practices among school students. Although national and international organizations have implemented various programmes aimed at improving hygiene awareness, evidence suggests that many students still engage in unhealthy practices such as irregular handwashing, poor oral hygiene, improper nail care, and inadequate personal grooming. These behaviours increase their susceptibility to communicable diseases and other health-related problems (Ogundele, 2022).

Health education intervention programmes have been recognized as effective strategies for improving hygiene knowledge and promoting positive behavioural change among adolescents. Health education provides individuals with the necessary knowledge, skills, and motivation to adopt healthy practices and make informed decisions concerning their health. Previous studies have demonstrated that educational interventions can significantly improve hygiene awareness and practices among school children by encouraging behaviours such as regular handwashing, proper oral care, regular bathing, and environmental cleanliness (Bloomfield et al., 2017; WHO, 2021).

In the Federal Capital Territory (FCT), Abuja, secondary school students are exposed to various environmental and behavioural factors that may influence their personal hygiene practices. Although some schools provide hygiene education and sanitation facilities, observations and previous studies indicate that many students still demonstrate poor hygiene behaviours. These behaviours include eating with unwashed hands, inadequate oral hygiene practices, poor care of fingernails, irregular bathing, and

failure to observe proper respiratory hygiene. Such practices may increase the risk of communicable diseases and negatively affect students' health and academic performance.

Therefore, this study seeks to examine the effect of a health education intervention programme on personal hygiene practices among secondary school students in the Federal Capital Territory, Abuja, Nigeria. Findings from the study are expected to provide evidence that can guide policymakers, school administrators, health educators, and other stakeholders in designing effective school-based health promotion programmes aimed at improving personal hygiene and preventing hygiene-related diseases among adolescents.

Statement of the Problem

Personal hygiene is essential for preventing communicable diseases and promoting the health and well-being of students. Good hygiene practices such as regular handwashing, proper oral care, regular bathing, and clean dressing help reduce the risk of infections and improve students' overall quality of life (WHO, 2023). However, poor personal hygiene remains a common problem among school-aged children in many developing countries, including Nigeria.

Evidence suggests that many secondary school students engage in poor hygiene practices, which expose them to preventable diseases and may negatively affect their academic performance and school attendance (UNICEF, 2020). These practices are often associated with inadequate hygiene knowledge, poor sanitation facilities, and insufficient health education.

Although studies have assessed personal hygiene knowledge and practices among students in different parts of Nigeria, limited attention has been given to the effectiveness of health education intervention programmes in improving these practices, particularly among basic secondary school students in the Federal Capital Territory (FCT), Abuja. Consequently, there is insufficient evidence on whether structured health education interventions can bring about positive behavioural change among students in the study area.

Therefore, this study seeks to determine the effect of a health education intervention programme on personal hygiene practices among basic secondary school students in the Federal Capital Territory, Abuja. The findings will provide evidence for developing effective school-based health promotion programmes aimed at improving students' hygiene behaviours and health outcomes.

Purpose of the study

The purpose of the study is to establish the effect of health education intervention programme on personal hygiene practice among secondary school students in Abuja Nigeria. The specific purposes of the study were to assess:

1. Effect of health education intervention programme on practice of personal hygiene before and after the intervention among basic secondary school students in Abuja.
2. Difference in Experimental and control group on practice after exposure to health education intervention programme on personal hygiene among basic secondary school students in Federal Capital Territory, Abuja.

Research questions

The following research questions were formulated:

1. What is the effect of health education intervention programme on personal hygiene practice after the intervention among basic secondary school students in Abuja?
2. What is the experimental and control group before and after exposure to health education intervention programme on personal hygiene practice among basic secondary school students in Abuja?

Methodology

Research Design

This study employed a pre-test, post-test, non-equivalent control group quasi-experimental research design. The design was considered appropriate because it allowed the researcher to use intact classes without random assignment of participants to groups, which is often impractical in educational settings (Creswell & Creswell, 2018). The study involved two groups: an experimental group and a control group. Students from Government Secondary School, Jabi II, Abuja constituted the experimental group, while students from Government Secondary School, Giri, Gwagwalada constituted the control group. Both groups were administered a pre-test before the commencement of the intervention to determine their baseline level of personal hygiene practices and to assess the comparability of the groups.

The experimental group received a structured Health Education Intervention Programme on Personal Hygiene for a period of six (6) weeks. The intervention focused on promoting appropriate personal hygiene practices such as handwashing, oral hygiene, bathing, nail care, and proper grooming. The control group did not receive the personal hygiene intervention during the study period but participated in an alternative health education activity on emotional health. At the end of the intervention period, a post-test was administered to both the experimental and control groups using the same instrument. The differences between the pre-test and post-test scores were compared to determine the effect of the Health Education Intervention Programme on personal hygiene practices among basic secondary school students in the Federal Capital Territory, Abuja, Nigeria. The use of both pre-test and post-test measurements helped to control for initial differences between the groups and provided a basis for assessing changes attributable to the intervention.

Population of the Study

The population for this study consists of one hundred and thirty -three thousand and fifty-five (133,055) basic public Secondary School Students in Federal Capital Territory Abuja Nigeria (Universal Basic Education Board 2023). See appendix C for the total number of the junior public schools in AMAC municipal area, Federal Capital Territory, Abuja Nigeria.

Sample and Sampling Procedure

The sample for this study consisted of 100 Basic Secondary School students drawn from two public secondary schools in the Federal Capital Territory (FCT), Abuja, Nigeria. The sample size was considered adequate for a quasi-experimental study involving an experimental and a control group. According to Sambo (2008), a minimum sample of 30 participants per group is sufficient for experimental studies. Similarly, Creswell and Creswell (2018) noted that experimental and quasi-experimental studies may utilize relatively small samples provided they are adequate to detect changes resulting from the intervention. Therefore, a total sample of 100 students, comprising 50 students in the experimental group and 50 students in the control group, was considered appropriate for the study.

A multistage sampling procedure involving purposive, proportionate, and simple random sampling techniques was employed. In the first stage, two Area Councils were purposively selected from the six Area Councils in the Federal Capital Territory based on accessibility, similarity of school characteristics, and willingness to participate in the study. In the second stage, one public secondary school was purposively selected from each of the selected Area Councils. One school served as the experimental group, while the other served as the control group. In the third stage, proportionate sampling was used to allocate the required number of participants from JSS I, JSS II, and JSS III

according to the student population of each class in the selected schools. This ensured fair representation of students across the different class levels.

In the fourth stage, simple random sampling by balloting without replacement was used to select the required number of students from each class. A sampling frame containing the names of eligible students in each class was obtained from the school register. Students were assigned identification numbers, and the required number of participants was selected through a random balloting procedure. This ensured that every eligible student had an equal chance of being selected for the study. The multistage sampling procedure was adopted to ensure adequate representation of students from the selected schools while maintaining the feasibility of implementing the health education intervention programme within the study period.

Instrument for Data Collection

The research instrument to be used for collection of relevant data for this study is a closed-ended researcher-developed questionnaire, on the Practice of Personal Hygiene (AAPPH). The questionnaire is divided into four (4) sections (A and B), Section A consists of the 5-items on socio-demographic characteristics of the respondents. Section B consists of the ten (10) statements on Practice of Personal Hygiene among Basic Secondary School Students. The statements are structured based on modified 4-point Likert scale, section (B) is for Always (A) Often (O) Sometime (S) Not at All (NA). Therefore, any mean score of response that is 2.5 and above was considered positive, while mean score of response below 2.5 was considered negative.

Validity of the Instrument

The instrument used for data collection was subjected to face, content, and construct validity to ensure that it adequately measured the variables of the study. To establish validity, the draft questionnaire and intervention package were submitted to five experts from the Department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria. All the experts possessed Doctor of Philosophy (Ph.D.) degrees in Health Education and related fields, with extensive experience in educational research, instrument development, and health promotion. The experts critically examined the instrument with respect to the clarity of language, relevance of items to the study objectives, appropriateness of the response options, adequacy of content coverage, and alignment of the items with the constructs being measured. Based on their observations and recommendations, ambiguous and repetitive items were modified, irrelevant items were removed, and some statements were restructured to improve clarity and comprehensibility. Their suggestions also ensured that the questionnaire adequately covered the various dimensions of personal hygiene practices among secondary school students. The corrected version of the instrument was subsequently produced and used for data collection.

Reliability of the Instrument

The reliability of the instrument was established through a pilot study conducted among 20 Basic Secondary School students from a public secondary school outside the study area but with characteristics similar to those of the study population. The purpose of the pilot study was to determine the consistency and stability of the instrument before its administration for the main study. Data obtained from the pilot test were analyzed using Cronbach's Alpha reliability coefficient. Cronbach's Alpha was considered appropriate because the instrument consisted of multiple Likert-scale items measuring the same construct. According to George and Mallery (2019), a reliability coefficient of 0.70 and above is considered acceptable for research purposes. The analysis yielded a Cronbach's Alpha coefficient of 0.87 for the overall instrument, indicating that the questionnaire possessed adequate internal consistency and was therefore reliable for use in the study.

Procedure for Data Collection

An introductory letter was obtained from the Head of the Department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria, and presented to the Universal Basic Education Board (UBEB), Federal Capital Territory (FCT), Abuja, to obtain approval for the study. Following approval, permission was sought and obtained from the principals of the selected schools. The researcher, assisted by four trained research assistants, administered the pre-test questionnaire to both the experimental and control groups to determine their baseline level of personal hygiene practices. Thereafter, the experimental group received a structured Health Education Intervention Programme on Personal Hygiene for a period of six weeks. The intervention covered topics such as handwashing, oral hygiene, body cleanliness, nail care, and disease prevention, using methods including lectures, discussions, demonstrations, and question-and-answer sessions. The control group did not receive the personal hygiene intervention but participated in general health education sessions unrelated to personal hygiene. At the end of the intervention period, the post-test questionnaire was administered to both groups using the same instrument. The pre-test and post-test scores obtained were analyzed to determine the effect of the Health Education Intervention Programme on personal hygiene practices among Basic Secondary School students in the Federal Capital Territory, Abuja, Nigeria.

Intervention Programme

The data collection was in three steps and the instrument was administered to the students by the research assistants and the researcher. The steps were as follows:

The researcher with the help of the research assistants (RAs) administered one hundred (100) copies of the research instrument to both the experimental and control groups for the pre-test a week before the treatment session to Junior Secondary School Jabi II and public junior secondary school Giri Gwagwalada which is experimental and control group to identify knowledge gap on Practice of Personal Hygiene.

The intervention programme was implemented in three phases: pre-intervention assessment, intervention, and post-intervention assessment. Prior to the commencement of the intervention, the researcher and four trained research assistants administered the Personal Hygiene Practice Questionnaire (PHPQ) to both the experimental and control groups. The pre-test was conducted one week before the intervention programme to determine the participants' baseline level of personal hygiene practices and identify existing gaps in hygiene-related behaviours.

Following the pre-test, the experimental group, comprising students from Junior Secondary School, Jabi II, received a structured Health Education Intervention Programme on Personal Hygiene for a period of six weeks. The intervention sessions were conducted once weekly on Wednesdays between 10:10 a.m. and 11:30 a.m. in the school hall. The programme was delivered using lectures, demonstrations, group discussions, practical activities, and question-and-answer sessions. During the first week, students were introduced to the concept, meaning, and importance of personal hygiene. The second week focused on proper handwashing practices, including demonstrations of the correct handwashing techniques and the critical times for washing hands. In the third week, students were taught oral hygiene practices, including proper tooth-brushing techniques and the importance of regular oral care.

The fourth week concentrated on body cleanliness, hair care, and nail hygiene, emphasizing the importance of regular bathing, grooming, and maintaining clean fingernails. During the fifth week, the students were educated on diseases associated with poor personal hygiene and the role of hygiene in preventing communicable diseases. The final week was devoted to reviewing and reinforcing all the topics covered during the

programme through discussions, practical demonstrations, and feedback sessions. Each session lasted approximately 80 minutes and was guided by a lesson plan developed by the researcher and validated by experts in Health Education.

The control group, comprising students from Junior Secondary School, Giri, Gwagwalada, did not receive the personal hygiene intervention during the study period. Instead, they participated in general health education sessions on emotional health for the same duration and frequency as the experimental group. This was done to ensure equal contact time while preventing contamination of the intervention.

At the end of the six-week intervention period, the Personal Hygiene Practice Questionnaire (PHPQ) was re-administered to both the experimental and control groups as a post-test. The post-test scores were compared with the pre-test scores to determine the effect of the Health Education Intervention Programme on personal hygiene practices among Basic Secondary School students in the Federal Capital Territory, Abuja, Nigeria.

Procedure for Data Analysis

After collecting and sorting out copies of the questionnaire, a coding scheme was developed and each questionnaire was reviewed and coded into a computerized database using a Microsoft Excel spreadsheet. A descriptive statistic of frequencies and percentages, mean and standard deviation was used to analyze the demographic characteristics of the respondents and research questions respectively. Independent sample t-test and Pair sample t-test was used to analyze the data generated for the study. Pair sample t-test was used to test hypotheses; H_0 1 There is no significant effect of health education intervention programme on personal hygiene practice before and after the intervention among basic secondary school students in Abuja, at 0.05 level of significance. Independent sample t-test was used for the three hypotheses H_0 2 There is no significant difference between experimental and control group after health education intervention programme on personal hygiene practice among basic secondary school students in Abuja

Results

Descriptive analysis of the participants' socio-demographic characteristics

The total number of fifty (50) participants were selected from each of the group none of the participants in either groups could not meet all the required information. Therefore, fifty (50) participants each completed the study in the experimental and control group. Among the socio-demographic characteristics of the respondents selected for the analysis along their expressed responses were: Age, Gender, Ethnic group, and Parents level of educational and Current Class of Study. These variables are categorized into ranges and presented in frequency and percentages in table 1

Table 1: Demographic Characteristics of the Participants

Variable	Variable Options	Experimental		Control	
		Freq.	Percent %	Freq.	Percent %
Age	9 - 11 years	21	42.0%	25	50.0%
	12 - 14 years	26	52.0%	23	46.0%
	15 - 17 years	2	4.0%	1	2.0%
	18 and above	1	2.0%	1	2.0%
	Total	50	100.0	50	100.0
Gender	Male	26	52.0%	18	36.0%
	Female	24	48.0%	32	64.0%
	Total	50	100.0	50	100.0
Parent Level of Education	Primary	16	32.0%	7	14.0%
	Qur'anic	7	14.0%	9	18.0%
	Secondary	15	30.0%	11	22.0%
	Tertiary	12	24.0%	23	46.0%
	Total	50	100.0	50	100.0
Current Class of Study	JSS1	25	50.0%	20	40.0%
	JSS2	11	22.0%	6	12.0%
	JSS3	14	28.0%	24	48.0%
	Total	50	100.0	50	100.0

Source: Field survey, 2024

Table 4.1 showed that on age distribution for experimental group 9 - 11 years has 21 (42.0%); 12 - 14 Years has 26 (52.0%); 15 - 17 Years, has 2 (4.0%), and 18 and above Years, has 1 (2.0%).. For the control group 9 - 11 years with 25 (50.0%) Making the age distribution of 12 – 14 years to be higher while 23 (46.0%) above is lowest is the highest, 15-17 Years, has 1 (2.0%), while 18 and above 1 is the lowest. The distribution on gender showed in experimental group Male 26 (52.0 %) while Female has 24 (48.0%) indicating that Male respondents are higher. In control group Male 18 (36.0%) while Female has 32

(64.0%) indicating that Female respondents are higher. The distribution on Parent Level of Education showed that in experimental group; Primary has 16 (32.0%), Qur'anic 7 (14.0%), Secondary 15 (30.0%); and Tertiary 12 (24.0%). Primary has the highest frequency while Qur'anic has the lowest. In control group Primary has the lowest with 7 (14.0%) and Tertiary has 23 (46.0%). The distribution on Current Class of Study showed that in experimental group; JSS I has 25 (40.0%), JSS 2 has 11 (22.0%) and JSS 3 has 14 (28.0%). JSS 1 has the highest frequency while JSS 2 has the lowest. In control group JSS 3 has the highest with 24 (48.0%) while JSS 2 has the lowest with 6 (12.0%)

What is the effect of health education intervention programme on personal hygiene practice after the intervention programme among basic secondary school students in Abuja?

To determine the effect of six weeks health education intervention on personal hygiene practice, the two groups' rated responses on items relating to on personal hygiene practice were computed and compared using mean scores and standard deviation. The benchmark mean was fixed at 2.50 as the midpoint average of the 4 point scale used for the measurement. The summary is presented in Table 2

Table 2 Mean score and standard deviation on Personal Hygiene practice for experimental and control group among Basic Secondary School Students in Abuja Nigeria.

S/N	Personal Hygiene Practice for experimental and control group among Basic Secondary School Students	Status	Experimental		Control	
			Mean	Std. Dev.	Mean	Std. Dev.
1	I bath twice a day to remove dead skin cells.	Pre-test	1.78	0.421	2.86	0.156
		Post-test	3.59	0.291	2.07	0.502
2	I wash my hair every day to prevent me from having lies and rashes.	Pre-test	2.54	0.471	1.90	0.200
		Post-test	2.77	0.384	2.14	0.325
3	I trim my fingernails regularly to prevent me from contacting disease.	Pre-test	1.77	0.897	1.86	0.312
		Post-test	2.53	0.456	2.18	0.355
4	I always wash my hands with soap and water after using the convenience helps to prevent them from contamination.	Pre-test	1.71	0.431	2.98	0.226
		Post-test	2.85	0.536	1.31	0.215
5	I brush my teeth at least twice a day after meal reduces the risk of tooth decay.	Pre-test	1.92	0.796	2.58	0.215
		Post-test	3.51	0.629	2.57	0.229
6	I also floss my teeth at least once a day to prevent the formation of plaque on my gum.	Pre-test	1.86	0.272	1.91	0.069
		Post-test	2.83	0.368	1.78	0.298
7	I use handkerchief to blow my nose in order to prevent cross infection.	Pre-test	1.62	0.392	2.50	0.331
		Post-test	2.55	0.490	2.66	0.536
8	I wash my clothes always to prevent the spread of germs through soiled clothing.	Pre-test	1.65	0.464	1.78	0.331
		Post-test	2.98	0.257	2.56	0.536
9	I wash my feet with soap and water to prevent the risk of athlete's foot infection.	Pre-test	2.53	0.815	1.83	0.384
		Post-test	2.71	0.637	1.24	0.173
10	I wash my hands before and after eating to prevent me from contracting germs.	Pre-test	1.61	0.740	1.86	0.345
		Post-test	3.54	0.438	1.45	0.155
	Aggregate	Pre-test	1.90	0.569	2.03	0.224
		Post-test	2.99	0.462	2.00	0.279

(Decision Bench mark = 2.50)

The rating of the two groups in Table 4.3 revealed a positive response of participants in post- test of experimental group on Personal Hygiene practice. The participants in pre-test

of experimental group exhibited decreased practice of Personal Hygiene with a mean and standard deviation of 1.90 and 0.569 respectively, while participants in post-test of same group exhibited increased practice of Personal Hygiene with a mean and standard deviation of 2.99 and 0.462 respectively. The participants in control group exhibited decreased Personal Hygiene practice pre and post-test having an aggregate mean of 2.03 and 2.00 with standard deviation of 0.224 and 0.279 respectively. All items has a mean higher than 2.50 making them all agreed in pre and post intervention for experimental except lower for pre-test of; I bath twice a day to remove dead skin cells (1.78), I trim my fingernails regularly to prevent me from contacting disease (1.77), I always wash my hands with soap and water after using the convenience helps to prevent them from contamination (1.71), I brush my teeth at least twice a day after meal reduces the risk of tooth decay (1.92), I also floss my teeth at least once a day to prevent the formation of plaque on my gum (1.86), I use handkerchief to blow my nose in order to prevent cross infection (1.62), I wash my clothes always to prevent the spread of germs through soiled clothing (1.65) and I wash my hands before and after eating to prevent me from contracting germs (1.61). The control group had positive attitude on pre-test of I bath twice a day to remove dead skin cells (2.86), I always wash my hands with soap and water after using the convenience helps to prevent them from contamination (2.98), I brush my teeth at least twice a day after meal reduces the risk of tooth decay (2.58), and I use handkerchief to blow my nose in order to prevent cross infection (2.50) all others are negative. The positive were reflected in post-test in I brush my teeth at least twice a day after meal reduces the risk of tooth decay (2.57), I use handkerchief to blow my nose in order to prevent cross infection (2.66), and I wash my clothes always to prevent the spread of germs through soiled clothing (2.56) all others are negative.

What is the difference between control and experimental group on Personal Hygiene practice after the health education intervention programme among Basic Secondary School Students in Abuja Nigeria?

To determine the difference in six weeks health education intervention on Personal Hygiene practice, in pretest and posttest. The two groups' rated responses on items relating on Personal Hygiene practice were computed and compared using mean scores and standard deviation while both differences were computed. The benchmark mean was fixed at 2.50 as the midpoint average of the 4 point scale used for the measurement. The summary is presented in Table 3

Table 3 Differences in Mean after intervention of experimental and control group on Personal hygiene practice among basic secondary school students.

Variables	Group	N	Test	Mean	Standard Deviation	Mean Diff.
Personal hygiene practice	Experimental	50	Post-test	2.99	0.669	
	Control	50	Post-test	2.00	0.279	0.99

(Decision mean 2.5)

The rating in table 4.6 indicates that in experimental group a mean of 1.90 and 2.99 for pre and post-test with standard deviation of 0.569 and 0.669 respectively. In pre-test the aggregate mean for experimental group indicate below 2.50, while posttest is above the benchmark mean fixed. It shows increase in ptactice of the participants. In control group a mean of 2.03 and 2.0 for pre and post-test with standard deviation of 0.224 and 0.279 respectively. In pre and post-test the aggregate mean for control group indicate below 2.50 the benchmark mean fixed. The mean difference between experimental and control group

for pre and post-test is 0.13 and 0.99 which is significant. The mean difference is significant.

Hypotheses Testing

Hypothesis one: There is no significant effect of health education intervention programme on personal hygiene practice after health education intervention among basic secondary school students in Abuja. The summary of the analysis is presented in table 4.

Table 4: Summary of Paired-Sample t-test on personal hygiene Practice among basic secondary school student in Abuja, Nigeria

Variable	Test	N	Mean	Std. Dev.	Std. Error	Mean Diff	t-value	Df	p-value
Personal hygiene practice	Pre-test	50	1.90	0.569	0.010				
						5.63	60.56	59	0.001
Test Mean	Post-test	50	2.99	0.462	0.044				

(*t-critical* = 1.98, *p* < 0.05)

A paired-samples *t*-test indicated that personal hygiene practice scores were significantly higher after the health education intervention (*M* = 2.99, *SD* = 0.46) than before the intervention (*M* = 1.90, *SD* = 0.57), *t*(59) = 60.56, *p* < .001. This result demonstrates that the health education intervention programme significantly improved personal hygiene practices among basic secondary school students in Abuja, Nigeria.

Hypothesis two: There is no significant difference between experimental and control group on personal hygiene practice after health education intervention programme among basic secondary school students in Abuja. The summary of the analysis is presented in table 5

Table 5: Summary of Independent Sample t-test for Control and Experimental Group on personal hygiene Practice after health education Intervention programme among Basic secondary School Students in Abuja.

Variable	Test	N	Mean	Std. Dev.	Mean Diff.	t-value	Df	p-value
Personal Hygiene Practice	Experimental	50	2.99	0.462	0.99	5.631	58	0.003
	Control	50	2.00	0.279				

(*t-critical* = 1.98, *p* < 0.05)

An independent samples *t*-test showed that the experimental group (*M* = 2.99, *SD* = 0.46) scored significantly higher on personal hygiene practice than the control group (*M* = 2.00, *SD* = 0.28), *t*(58) = 5.63, *p* = .003. Therefore, the health education intervention programme significantly improved personal hygiene practices among basic secondary school students in Abuja, Nigeria.

Discussion of Findings

This study examine the Effect of Health Education Intervention Programme on Personal Hygiene practice among basic Secondary School Students in Abuja Nigeria. To achieve the objectives of this study, the study was structured along with six purposes, research questions and hypotheses which were all tested respectively.

The finding of Hypothesis One revealed that personal hygiene practice scores were significantly higher after the health education intervention (*M* = 2.99, *SD* = 0.46) than before the intervention (*M* = 1.90, *SD* = 0.57), *t*(59) = 60.56, *p* < .001. This indicates

that the health education intervention programme significantly improved personal hygiene practices among basic secondary school students in Abuja, Nigeria. The null hypothesis was therefore rejected.

This finding is not surprising because health education interventions are designed to increase knowledge, influence attitudes, and promote desirable health behaviours. Through repeated exposure to information, demonstrations, and practical activities, students are more likely to understand the importance of maintaining proper hygiene and adopt healthier practices. The substantial increase in the mean score after the intervention suggests that the programme effectively enhanced students' awareness and translated that awareness into improved hygiene behaviour.

The finding is consistent with the study conducted by Dreibelbis et al. (2016), who reported that school-based hygiene education programmes significantly improved handwashing and personal hygiene behaviours among school children. Similarly, Freeman et al. (2014) found that hygiene education interventions in schools resulted in improved hygiene practices and reduced the prevalence of hygiene-related diseases among students.

The result also agrees with the findings of Mbakaya et al. (2017), who observed significant improvements in personal hygiene practices among secondary school students following a structured health education programme. Likewise, Rabie and Curtis (2006) concluded that health education interventions significantly promote positive hygiene behaviours, especially among children and adolescents.

Furthermore, the finding supports the work of Onyango et al. (2018), who found that students exposed to hygiene education were more likely to practice regular handwashing, body cleanliness, and proper sanitation than those who were not exposed to such programmes.

However, the finding contradicts the study of Aunger et al. (2010), who reported that health education alone may not always produce sustained behavioural changes when environmental and infrastructural barriers such as inadequate water supply and sanitation facilities exist. Similarly, Contzen and Mosler (2015) found that although health education improved knowledge, the improvement in actual hygiene practices was not statistically significant due to poor reinforcement and lack of enabling facilities.

In the researcher's opinion, the significant improvement observed in this study may be attributed to the comprehensive nature of the intervention programme, which likely provided students with practical demonstrations, motivation, and repeated exposure to hygiene messages. The researcher believes that when health education is properly planned, culturally relevant, and supported by school authorities, it can effectively improve hygiene practices among adolescents. The finding therefore reinforces the importance of integrating regular health education programmes into the school curriculum as a strategy for promoting healthy lifestyles and preventing communicable diseases among students.

The finding of Hypothesis Two showed a statistically significant difference between the experimental group ($M = 2.99$, $SD = 0.46$) and the control group ($M = 2.00$, $SD = 0.28$) in personal hygiene practice after the intervention, $t(58) = 5.63$, $p = .003$. This indicates that students who participated in the health education intervention programme demonstrated significantly better personal hygiene practices than those who did not receive the intervention. Consequently, the null hypothesis was rejected.

The significant difference between the experimental and control groups suggests that the observed improvement in hygiene practices was due to the intervention rather than chance or external factors. This finding confirms the effectiveness of health education programmes in modifying health-related behaviours among school-aged children.

The finding is in agreement with the study conducted by Jasper et al. (2012), who reported that students exposed to health education interventions exhibited significantly

higher hygiene practice scores than students in control groups. Similarly, Vivas et al. (2010) found that hygiene education significantly improved personal hygiene practices among school children compared to those who did not receive the intervention.

The result also aligns with the findings of Bieri et al. (2013), who observed significant differences in hygiene-related behaviours between intervention and non-intervention groups following a structured health promotion programme. Likewise, Azuogu et al. (2016) found that students who received health education demonstrated significantly better hygiene practices than their counterparts in the control group.

The finding further supports the study by Oloruntoba et al. (2014), which reported that health education interventions significantly improved students' hygiene practices and sanitation behaviours in Nigerian schools.

Conversely, the finding differs from that of Bowen et al. (2013), who found no significant difference between intervention and control groups because of inadequate programme duration and poor compliance among participants. It also contrasts with the findings of Hullah et al. (2015), who reported that improvements in hygiene practices were minimal when educational interventions were not accompanied by adequate sanitation infrastructure and environmental support.

In the researcher's opinion, the significant difference observed between the experimental and control groups provides strong evidence of the effectiveness of the health education intervention programme. The researcher believes that exposure to structured health education equips students with the knowledge, skills, and motivation required to adopt healthier hygiene behaviours. The finding underscores the importance of implementing school-based health education programmes as a sustainable approach to improving personal hygiene practices and enhancing the overall health status of students. Furthermore, the researcher is of the view that continued reinforcement of hygiene messages, provision of sanitation facilities, and active involvement of teachers and parents would further strengthen the effectiveness of such interventions.

Conclusion

From the findings the researcher wishes to conclude as follows:

1. Health education intervention programme on personal hygiene practice before and after the intervention among basic secondary school students in Abuja, Nigeria is effective.
2. There was difference between control and experimental group on personal hygiene practice after the health education intervention programme among basic secondary school students in Abuja, Nigeria.

Recommendations

In view of the findings and the conclusions reached in this study, it was recommended as followings:

1. School administrators and health educators should sustain personal hygiene education through health clubs, posters, videos, and other school-based communication channels, as the intervention significantly improved students' hygiene practices.
2. Education authorities should provide regular training for teachers to reinforce hygiene messages and offer support to students with hygiene-related challenges.
3. The Federal Capital Territory Education Secretariat, health agencies, and NGOs should provide schools with hygiene facilities and materials, such as handwashing stations, clean water, and hygiene kits, to support and sustain good hygiene practices among students.

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