



doi:10.5281/zenodo.14981365

# **Gender Effects Of Health Education On Food Safety Practices Among Public Secondary School Students In Owerri Education Zone I, Imo State, Nigeria**

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## **ABSTRACT**

This study focused on gender effect of health education on food safety practices among secondary school students in Owerri education Zone. This study used a quasi-experimental pretest-posttest design. The population of this study consisted of all the public secondary schools in Owerri Education Zone I, Imo State. The sample size for this study consisted of 397 students. A Food Safety Practice Achievement Test (FSPAT) was used as instrument for data collection. The instrument (FSPAT) comprised 40 multiple-choice questions addressing each cluster. The Instrument, Food Safety Practice Achievement Test (FSPAT), was validated and reliability of the instrument (FSPAT) was established by administering the instrument once on thirty (30) students from Enyiogugu secondary school Aboh Mbaise using Kudar-Richardson which yielded a reliability coefficient index of 0.97. Data were analysed using mean and standard deviation while Analysis of Covariance (ANCOVA) was used to test the hypotheses at  $p < 0.05$ . Results showed that male students had a mean achievement score of 45.2 and SD of 7.747 in the pre-test with mean of 125.5 and SD of 14.114 in the post-test with mean gain of 80.3 while female students had mean of 46.2 and SD of 9.295 in the pre-test with mean of 113.4 and SD of 12.491 in the post-test with mean gain of 67.2. the result also showed no significant difference in the mean achievement scores of male and female students exposed to food safety practices through HEP ( $p = >0.005$ ). Based on the findings of this study, it was concluded that Health Education Programmes significantly improved students' understanding and practices based on gender. Therefore, there is need to put in place special programmes that will enhance knowledge and positive attitude towards food safety among young ones.

**Keywords:** food safety practices, health education, secondary school students

## **INTRODUCTION**

Over the past decade, the increasing rate of foodborne diseases among students have become alarming as the global prevalence of foodborne diseases have nearly doubled since 1980-2024, rising from 4% to 8% in the adolescent population. This reflects an increase of foodborne diseases such as hepatitis A, Salmonella, norovirus, E. coli infection and many others Food and Drug Administration (2021). These diseases are seen as a pervasive, permanent problem that can lead to morbidity and mortality (Kenneth, 2018). Foodborne disease are increasing worldwide and still to be more in secondary schools including my study area Owerri Education Zone I because of their poor knowledge of the food safety practices due to neglect of food safety practices especially based on gender.

It is expected that public secondary school students should practice food safety such as proper handwashing before food handling, use of clean water in cooking, using non-contaminated food and food storage condition.

Secondary school students should have basic knowledge and practice of these food safety while in school through health education to be able to prevent food borne disease such as Salmonella, Ristera or E. coli, and norovirus or hepatitis A (Abdall 2008; Abdul & Dahan, 2013).

Despite efforts put in place by Nigerian food and drug authority and integration of the food and nutrition in school health program, there are still increases in foodborne diseases. Some researchers are of the view that it will lead to increased morbidity, school absenteeism, low grades, school drop outs and the consequential increased illiteracy (Agbazwe, 2010; Ewuzie, 2014). Therefore, the poor handling of food among secondary school students depend on teachers and researchers poor attitude that constitutes the problem of this study. This is due to the fact that the effect of health education on food safety practices has not been ascertained. It is on this note that the researcher decided to carry out the study to determine gender effect of health education on food safety practices among secondary school students in Owerri education Zone.

### METHODOLOGY

This study was conducted in Owerri Education Zone I of Imo State, Eastern Nigeria. This study used a quasi-experimental pretest-posttest design. The population of this study consisted of all the public secondary schools in Owerri Education Zone I, Imo State. The sample size for this study consisted of 397 students. A Food Safety Practice Achievement Test (FSPAT) was used as instrument for data collection. The instrument (FSPAT) comprised 40 multiple-choice questions addressing each cluster. The Instrument, Food Safety Practice Achievement Test (FSPAT), was validated and reliability of the instrument (FSPAT) was established by administering the instrument once on thirty (30) students from Enyiogugu secondary school Aboh Mbaise using Kudar-Richardson which yielded a reliability coefficient index of 0.97. The pre-test was administered on the participant one day before the treatment started. Immediately after the treatment period, the same instrument was administered to the same students as post-test. All the research questions were answered using mean and standard deviation while Analysis of Covariance (ANCOVA) was used to test the hypotheses at  $p < 0.05$ .

From the result of the ANCOVA test as shown in Table 2, the statement of hypothesis 6 is accepted; implying that there is no significant difference in the mean achievement scores of male and female students exposed to food safety practices through HEP. This is because, the p-value (Sig. = .197) is greater 0.05 alpha level.

### RESULTS

**Table 1: Mean difference in the achievement scores of students of male and female students exposed to food safety practices through HEP**

Group	N	Mean Pre-test	Mean Post-test	Mean Gain Score	SD Pre-test	SD Pre-test
Male	208	45.2	125.5	80.3	7.747	14.114
Female	189	46.2	113.4	67.2	9.295	12.491

Table 1 shows that male students had a mean achievement score of 45.2 and SD of 7.747 in the pre-test with mean of 125.5 and SD of 14.114 in the post-test with mean gain of 80.3 while female students had mean of 46.2 and SD of 9.295 in the pre-test with mean of 113.4 and SD of 12.491 in the post-test with mean gain of 67.2. These gave mean difference in achievement score of 12.1 in favour of the male students. This shows that HEP slightly improved the achievement scores of male students than female students. This indicates that exposing secondary school students to food temperature control through health education programme is more effective on male students' achievement than the females.

Table 2: ANCOVA result on the significant difference in the mean achievement scores of male and female students exposed to food safety practices through HE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1842.041a	16	115.128	9.342	.000	.282
Intercept	4375.130	1	4375.130	355.019	.000	.483
Pre-test	1241.184	1	1241.184	100.716	.000	.210
Method	17.500	1	17.500	1.420	.234	.004
Gender	<b>20.595</b>	<b>1</b>	<b>20.595</b>	<b>1.671</b>	<b>.197</b>	<b>.004</b>
Age	23.069	1	23.069	1.872	.172	.005
Class	.131	1	.131	.011	.918	.000
Error	4682.985	380	12.324			
Total	1589534.500	397				
Corrected Total	6525.026	396				

From the result of the ANCOVA test as shown in Table 2, the statement of hypothesis 6 is accepted; implying that there is no significant difference in the mean achievement scores of male and female students exposed to food safety practices through HEP. This is because, the p-value (Sig. = .197) is greater 0.05 alpha level.

## DISCUSSION

This study found that exposing secondary school students to food temperature control through health education programme is more effective on male students' achievement than the females. There is no significant difference in the mean achievement scores of male and female students exposed to food safety practices through HEP. The result showed that majority of respondents who were males and who were females had high effects of health education on food safety practices. This implies health education had more effect on the males. This result may be due to other factors besides just gender. The result of this study does not align with that of Shen et al. (2015) which showed female students had better hygiene compared to male students. Also Sharif and Al-Malki (2010) performed a study on the knowledge, attitude and practice of Taif University students on food poisoning and concluded that there was a significant difference between the mean score of knowledge, attitude and practice according to discipline and gender. This was supported by Raji et al. (2021) which showed gender and education were significant predictors of knowledge and practice of the five keys to safer food among food handlers in food establishments. According to Afolaranmi et al. (2011), the ability to define personal hygiene was significantly higher among girls as compared to boys. Some studies believe gender is neutral in the effect of health education on food handlers as shown by Fariha et al. (2018) which concluded that the level of awareness among all participants was high and there was no considerable difference among gender and profession regarding food safety; males had high awareness about cooking techniques on food quality where females had higher awareness. Males had less knowledge about cooking protocols than females. Knowledge about storing food was also less in males than female (62%). To buttress this point, Ejomarie and Achalu, (2022) stated that health education had no significant effects on food vendor's behaviour towards food safety based on gender, age, class level and location. Several factors predicts the impact of gender on safety practice such as education, as more educated food handlers are more likely to practice food safety, also cultural practices whereby food handling is regarded traditionally as a woman's role will see more females practice food safety. The difference in the result between this study and reviewed studies may be due to other factors besides gender influencing safety practice among food handlers.

## CONCLUSION

Based on the findings of this study, it was concluded that Health Education Programmes significantly enhance students' understanding and practices based on gender. Therefore, there is need to put in place special programmes that will enhance knowledge and positive attitude towards food safety among young ones.

## RECOMMENDATIONS

In view of the findings of this study, the following recommendations were made:

1. Curriculum planners should incorporate food safety practices focused on food storage into regular school curricular.
2. School authorities should implement regular evaluation processes to assess the effectiveness of proper cooking of food in the school canteen and among school vendors.
3. Teachers should deliver effective health education to students focused on using non-contaminated food in the kitchen.
4. Government should provide basic facilities to schools for proper handwashing.

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