THE EFFECTS OF GERONTOLOGY INTERVENTION PROGRAMME ON KNOWLEDGE AND ATTITUDE OF SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE, NIGERIA

N. O.NNAEMEZIE, [1], PROF. J. O.OKAFOR, [2], N. S NWANKWO,.[3], U. L.IFEDIORA, [4]

[1,2,4] NNAMDI AZIKIWE UNIVERSITY, AWKA NIGERIA
[3] NWAFOR ORIZU COLLEGE OF EDUCATION, NSUGBE NIGERIA

Abstract:

Introduction.*The way people especially the young ones understand ageing is often heavily influenced by films and television programmes where it is often scarier than the reality. To try and address this issue and get the young ones ready, this study was concluded to determine the effect of gerontology intervention programme on knowledge and attitude of secondary school students in Anambra State.*

Method.*The study was delimited to Awka South Local Government Area of Anambra State. Quasi-experimental pre-test, post-test control group design was used on 282 junior and senior secondary school students selected from four secondary schools which included two private schools and two public schools and they were divided into control and experimental groups. Research tool was a researcher-developed instrument which was divided into three parts. Data were analyzed using SPSS. Mean was used to answer the research questions; analysis of covariance (ANCOVA) was used to answer the hypotheses at 0.05 level of significance.*

Result.*The results of the study showed that there was an increase in the mean knowledge and attitude scores of secondary school students after the gerontology intervention programme.*

Conclusion. *Based on the findings, conclusions were drawn and recommendations among others were made: there is a great need to expose students to the issue of ageing and health education on ageing process should also be taught in schools early enough.*

Keywords: *effects; gerontology; knowledge; attitude.*

Introduction

The teaching-learning process is a live experience involving engagement with others in the acquisition of knowledge which could be organized as a programme of events or in the form of intervention programme. An educational programme is that in which students receive classroom instructions (Farlex, 2019). It is also a system of projects or services intended to meet a public need. The purpose of any educational programme is to make students aware of knowledge especially in the area of gerontology.

Gerontology is one of those teaching experiences that would enforce positive attitude and good knowledge to the younger generation. Gerontology may be regarded as the study of the social, cultural, psychological, cognitive and biological aspects of ageing (Community Portland college, 2019). Ageing is a series of biological changes that follow a natural progression from birth through maturity to old age and death. Some of the items to be included in gerontology as part of the objectives of gerontology includes expectations of the aged, challenges of the aged, signs of ageing, quality diet for advancing age, major health problems affecting the ageing, population, life styles and conditions that promote premature and unhealthy ageing (Okonkwor, 2015). All these are included in the ageing process and must be studied under gerontology.

Ageing process brings about social and emotional changes and loss into our life (Area Agency on Ageing, 2013). In an effort to prepare for the increasing demand of the growing number of older adults, younger students must gain an understanding of the impact of the ageing process in their lives, their families and society as a whole through adequate knowledge (Davis & Bennett, 2015). Knowledge in gerontology is needed for planning and developing programmes and services which would improve the quality of life of older population. Dubois et al. noted some of the goals of gerontology to include: providing academic programmes and experiences through courses and field experiences, providing inter-disciplinary education and training that meet the diverse needs of older people, preparing students as generalist gerontologists for careers in a variety of gerontological settings. Also such early education has the potential to reverse negative stereotypes and increase interest in gerontology from a younger age. Therefore, since getting old is an inevitable process that everyone must pass through at some point and also the benefits that comes through the study of ageing process, this study is designed to determine the effects of gerontology intervention programme on knowledge and attitude of secondary school students in Anambra State. Also some variables moderated the study such as gender and class level of the students.

Method
The design for the study was a quasi-experimental pre-test-post-test with control group design. A quasi-experimental is an empirical intervention study used to estimate the causal impact of an intervention on target population without random assignment. The area of the study was Awka South Local Government Area of Anambra State. It has a population of 250,900 people and it is both urban and rural in nature with schools located at every location. The population of the study consisted of 584,284 junior and senior secondary school students in Anambra State. This figure is both private and public schools. And all the schools used were mixed gender school because private schools do not practice single gender schools. The sample of the study was 282 junior and senior secondary school students drawn from the four secondary schools used for the study. Multi-stage sampling technique was used to get the number of students listed above. Sampling started with getting the four schools that is two public and two private schools. One of the public

schools was the experimental group school while one was control group school; the same thing goes for the private schools. Each school has both junior class and senior class. The instrument for data collection was a Gerontology Knowledge Test and Attitude Questionnaire (GKTAQ). It is a researcher developed instrument, with three sections. Section A was the demographic data, Section B the knowledge test and Section C the attitude questions. The instrument was validated by three experts. The reliability of the instrument was established using Kudder-Richardson (K-1220) for the knowledge test and got a reliability co-efficient of .80 and Cronbach Alpha's for the attitude questions and also got a reliability coefficient of 0.925.

Intervention Procedure for Experimental Group and Control Group

Permission was granted by the various principals of the four schools used for the study so that gerontology would be included in their time-table so that it does not affect the students' class time and also the result of the research. The experimental group was exposed to 12 weeks on gerontology; a pre-test was given to both the control and experimental group at the first contact after the 12 weeks of studies the post-test was also administered to them. The control group schools had a different lesson not on gerontology but on civic education and national values. In order to control the extraneous variables intact classes was used and the same content (lesson) was taught. The post-test items was re-shuffled and renumbered before use for the post-test.

The data collected was analyzed using Statistical Package for Social Science (SPSS). Mean and standard deviation were used to answer research questions. The differences between the pre-test mean and the post-test mean was regarded as the mean differences scores. Analysis of Covariance (ANCOVA) was used to test all the hypotheses at 0.05 level of significance. When the post-test score is higher than the pre-test score, there is a mean gain but when the pre-test score is higher than the post-test, there is a mean loss.

Research Questions

1) What are the mean knowledge scores of secondary school students in both experimental and control groups before and after gerontology intervention programme?

2) What is the mean knowledge scores of male and female secondary school students in both experimental and control groups before and after gerontology intervention programme?

3) What are the mean knowledge scores of senior and junior secondary school students in both experimental and control groups before and after gerontology intervention programme?

4) What are the mean attitude scores of secondary school students in both experimental and control groups before and after gerontology intervention programme?

5)What are the mean attitude scores of male and female secondary school students in both experimental and control groups before and after gerontology intervention programme?

6)What are the mean attitude scores of senior and junior secondary school students in both experimental and control groups before and after gerontology intervention programme?

Hypotheses

1)The effect of gerontology intervention programme on the health knowledge scores of secondary school students in Anambra State will not differ significantly using their post mean scores.

2)The effects of gerontology intervention programme on the health knowledge scores of male and female secondary school students in Anambra State will not differ significantly using their post mean scores.

3)The effects of gerontology intervention programme on the health knowledge scores of private and public secondary school students in Anambra State will not differ significantly using their post mean scores.

4)The effect of gerontology intervention programme on health attitude scores of secondary school students in Anambra State will not differ significantly using their post mean scores.

5)The effect of gerontology intervention programme on health attitude scores by male and female secondary school students in Anambra State will not differ significantly using their post mean scores.

6)The effect of gerontology Intervention programme on the health attitude scores of public and private secondary school students in Anambra State will not differ significantly using their post mean scores.

Presentation and Analysis of Data

Research Question 1: What are the mean knowledge scores of secondary school students in both experimental and control groups before and after gerontology intervention programme?

Table 1: Pre-test and Post-test Mean Knowledge Scores of Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	n	Pretest $\overline{X}$	SD	Posttest $\overline{X}$	SD	$\overline{X}$ Difference
Experimental Group	163	19.04	3.42	20.02	3.16	0.98
Control Group	119	19.78	3.02	19.34	3.51	-0.44

Table 1 reveals the pre-test and post-test mean knowledge scores of secondary school students in experimental group to be 19.04 and 20.02 with a gained mean of 0.98 while the control group had 19.74, 19.34 and -0.44 as mean pre-test, post-test

and mean loss scores respectively. This shows that the experimental group had better mean knowledge score than their counterparts control group.

Research Question 2: What is the mean knowledge scores of male and female secondary school students in both experimental and control before and after gerontology intervention programme?

Table 2: Pre-test and Post-test Mean Knowledge Scores of Male and Female Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	Gender	n	Pretest $\overline{X}$	SD	Posttest $\overline{X}$	SD	X Difference
Experimental Group	Male	73	18.37	3.44	20.16	3.29	1.79
	Female	90	19.58	3.32	20.79	3.04	1.21
Control Group	Male	62	19.77	3.49	19.71	3.69	-0.06
	Female	57	19.79	2.48	18.95	3.30	-0.84

Table 2 shows the pre-test and post-test mean knowledge scores of 18.37 and 20.16 for male and 19.58 and 20.79 for female students in experimental group. The male students had a general mean score of 1.79 while their female counterparts had 1.21. On the other hand, male students in control group had 19.77, 19.71 and -0.16 as their pre-test, post-test and mean loss scores respectively while the female had 19.79, 18.95 and -0.84 as pre-test, post-test and mean loss scores respectively. This shows that male and female students in the experimental group had better mean knowledge scores than the male and female in the control groups.

Research Question 3: What are the mean knowledge scores of senior and junior secondary school students in both experimental and control groups before and after gerontology intervention programme?

Table 3: Pre-test and Post-test Mean Knowledge Scores of Senior and Junior Secondary Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	Education Level	n	Pretest $\overline{X}$	SD	Posttest $\overline{X}$	SD	X Difference
Experimental Group	SS2	50	20.14	2.81	21.90	2.22	1.76
	JS2	113	18.55	3.56	19.89	3.32	1.34
Control Group	SS2	57	20.82	2.41	20.30	2.89	-0.52
	JS2	62	18.82	3.25	18.47	3.82	-0.35

Table 3 highlights the pre-test and post-test mean knowledge scores of 20.14 and 21.90 for SS2 students and 18.55 and 19.89 for JS2 students in experimental groups. The SS2 students had a mean gained score of 1.76 while their counterparts in JS2 had 1.34. Also SS2 students in control group had 20.82, 20.30 and -0.52 as

their pre-test, post-test and mean loss score respectively while their counterparts in JS2 had 18.82, 18.42 and -0.35 as pre-test, post-test and mean loss scores respectively. This indicated that SS2 and JS2 students in the experimental group had better mean knowledge scores than the control group.

Research Question 4: What are the mean attitude scores of secondary school students in both experimental and control groups before and after gerontology intervention programme?

Table 4: Pre-test and Post-test Mean Attitude Scores of Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	n	Pretest $\overline{X}$	SD X	Posttest $\overline{X}$	SD Difference	X
Experimental Group	163	88.00	10.53	92.76	10.99	4.76
Control Group	119	88.98	12.10	89.51	12.16	0.53

The result in Table 4 reveals the pre-test and post-test mean attitude scores of secondary school students in experimental group to be 88.00 and 92.76 with a gained mean of 4.76 while the control group had 88.98, 89.51 and 0.53 as mean pre-test, post-test and mean gained scores respectively. Both the mean post-test score and gained mean attitude scores of students in experimental group were better than that of the control group.

Research Question 5: What are the mean attitude scores of male and female secondary school students in both experimental and control groups before and after gerontology intervention programme?

Table 5: Pre-test and Post-test Mean Attitude Scores of Male and Female Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	Gender	n	Pretest $\overline{X}$	SD X	Posttest $\overline{X}$	SD Difference	X
Experimental Group	Male	73	87.92	11.12	91.21	11.13	3.29
	Female	90	88.07	10.08	94.02	10.78	5.95
Control Group	Male	62	88.42	10.16	87.60	10.11	-0.82
	Female	57	89.60	13.97	91.60	13.86	2.00

Table 5 showed the pre-test and post-test mean attitude scores of 07.92 and 9`1.21 for msale and 88.07 and 94.02 for female students in experimental group. The male students had a gained mean score of 3.29 while their female counterparts

had 5.95. Also male students in control group had 88.42, 87.60 and -0.82 as their pre-test, post-test and mean loss scores respectively while their female counterparts had 89.60, 91.60 and 2.00 as pre-test, post-test and mean gained scores respectively. This shows that the male and female students in the experimental group had better attitude toward gerontology than male and female students in the control group.

Research Question 6: What are the mean attitude scores of senior and junior secondary school students in both experimental and control groups before and after gerontology intervention programme?

Table 6: Pre-test and Post-test Mean Attitude Scores of Senior and Junior Secondary School Students in Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	Class Level	n	Pretest $\overline{X}$	SD X	Posttest	SD $\overline{}$	X Difference
Experimental Group	SS2	50	88.26	10.80	93.10	9.74	4.84
	JS2	113	87.88	10.45	92.61	11.54	4.73
Control Group	SS2	57	89.25	9.29	90.04	11.90	0.70
	JS2	62	88.74	14.27	89.03	12.48	0.29

The table shows the pre-test and post-test mean attitude scores of 88.26 and 93.10 for SS2 students and 87.88 and 92.61 for JS2 students in the experimental group. The SS2 students had a gained mean score of 4.84 while their counterparts in JS2 had 4.73. Also SS2 students in control group had 89.25, 90.04 and 0.70 as their pre-test, post-test and gained mean score respectively while their counterparts in JS2 had 88.74, 89.03 and 0.29 as pre-test, post-test and gained mean score respectively. This shows that SS2 and JS2 of the experimental group had better attitude.

Hypotheses Testing
Hypothesis 1: The effect of gerontology intervention programme on the health knowledge scores of secondary school students in Anambra State will not differ significantly using their post mean scores.
Table 7: Summary of ANCOVA of the Mean Knowledge Scores of Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source of Variation	Class Level	n	Pretest $\overline{X}$	SD X	Posttest $\overline{}$	SD	X Difference
Corrected Model	1500.176	2	750.088		125.560		.000
Intercept	333.384	1	333.384		55.806		.000
Pretest	1406.875	1	1406.875		235.501		.000
Group	190.885	1	190.885		31.953		.000
Error	1666.736	279	5.974				
Total	116167.000	282					

Table 7 shows that there was a significant difference between the mean knowledge scores of secondary school students in both experimental and control groups after gerontology intervention programme. F, (1,279) = 31.953, p < 0.05. The null hypothesis of no significant difference between the two groups was therefore rejected.

Hypothesis 2: The effects of gerontology intervention programme on the health knowledge scores of male and female secondary school students in Anambra State will not differ significantly using their post mean scores.

Table 8: Summary of ANCOVA of the Mean Knowledge Scores of Male and Female Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source	SS	df	MS	F	p.value
Corrected Model	1315.932	2	657.966	99.176	.000
Intercept	400.993	1	400.993	60.442	.000
Pretest	1314.931	1	1314.931	198.201	.000
Gender	6.642	1	6.642	1.001	.318
Error	1850.979	279	6.634		
Total	116167.000	282			

Analysis in Table 8 shows that there was no significant difference between the mean knowledge scores of male and female secondary school students in both experimental and control groups after gerontology intervention programme. F, (1,279) = 1.001, p > 0.05. The null hypothesis of no significant difference between the two groups was therefore accepted.

Hypothesis 3: The effect of gerontology intervention programme on health knowledge scores of senior and junior secondary school students in Anambra State will not differ significantly using their post mean scores.

Table 9: Summary of ANCOVA of the Mean Knowledge Scores of Senior and Junior Secondary School Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source	SS	df	MS	F	p.value
Corrected Model	1500.176	2	750.088	125.560	.000
Intercept	333.384	1	333.384	55.806	.000
Pretest	1406.875	1	1406.875	235.501	.000
Group	190.885	1	190.885	31.953	.000
Error	1666.736	279	5.974		
Total	116167.000	282			

Table 9 shows that there was no significant difference between the mean knowledge scores of senior and junior secondary school students in both experimental and control groups after gerontology intervention programme. F, $(1,279) = 2.042$, $p>0.05$. The null hypothesis of no significant difference between the two groups was therefore accepted.

Hypothesis 4: The effects of gerontology intervention programme on the health attitude scores of secondary school students in Anambra State will not differ significantly using their post mean scores.

Table 10: Summary of ANCOVA of the Mean Attitude Scores of Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source	SS	df	MS	F	p.value
Corrected Model	6894.726	2	3447.363	31.159	.000
Intercept	12955.116	1	12955.116	117.093	.000
Pretest	6169.033	1	6169.033	55.758	.000
Group	919.458	1	919.458	8.310	.004
Error	30868.366	279	110.639		
Total	2393068.000	282			

Table 10 shows that there was a significant difference between the mean attitude scores of secondary school students in experimental and control groups after gerontology intervention programme. F, $(1,279) = 8.310$, $p<0.05$. The null hypothesis of no significant difference between the two groups was therefore rejected.

Hypothesis 5: The effects of gerontology intervention programme on health attitude scores of male and female secondary school students in Anambra State will not differ significantly using their post mean scores.

Table 11: Summary of ANCOVA of the Mean Attitude Scores of Male and Female Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source	SS	df	MS	F	p.value
Corrected Model	6752.713	2	3376.356	30.377	.000
Intercept	13553.698	1	13553.698	121.942	.000
Pretest	5874.078	1	5874.078	52.849	.000
Gender	777.444	1	777.444	6.995	.009
Error	31010.380	279	111.148		
Total	2393068.000	282			

Analysis in Table 11 shows that there was a significant difference between the mean attitude scores of male and female secondary school students in both experimental and control groups after gerontology intervention programme. F, $(1,279) = 6.995$, $p<0.05$. The null hypothesis of no significant difference between the two groups was therefore rejected.

Hypothesis 6: The effects of gerontology intervention programme on health attitude scores of senior and junior secondary school students in Anambra State will not differ significantly using their post mean scores.

Table 12: Summary of ANCOVA of the Mean Attitude Scores of Junior and Senior Students in Both Experimental and Control Groups Before and After Gerontology Intervention Programme (n = 282).

Source	SS	df	MS	F	p.value
Corrected Model	5976.241	2	2988.121	26.227	.000
Intercept	13389.165	1	13389.188	117.520	.000
Pretest	5975.213	1	5975.213	52.446	.000
Class Level	.973	1	.973	.009	.926
Error	31786.851	279	113.931		
Total	2393068.000	282			

Table 12 shows that there was no significant difference between the mean attitude scores of senior and junior secondary school students in both experimental and control groups after gerontology intervention programme. F, $(1,279) = .009$, $p>0.05$. The null hypothesis of no significant difference between the two groups was therefore accepted.

Discussion
The findings of the study showed that gerontology intervention programme had an effect on the knowledge and attitude of the students as shown by the positive values of mean gained scores of students in the experimental group. This increase in knowledge scores was as a result of the intervention programme while the control group had mean loss because of exposure to such intervention programme. The null hypothesis of no significant difference was rejected.
The result from the study showed the male students in the experimental group had better mean knowledge score compared to the females in the same group.

This result was in line with the findings of the study of Dennis, Muller, Miller and Banerjee (2004) that males score were higher compared to those of females, but disagreed with their hypotheses on high significant differences between the mean knowledge scores of male and female students in both experimental and control groups after the gerontology intervention programme was therefore rejected for this study. The result must have been so because male students are more likely to engage in risky behaviours but when they are exposed to know the pros and cons of their behaviour in relation to ageing, they might pay attention to the intervention.

The findings of this study revealed that private school students in the experimental group had higher mean gained knowledge score of 1.84 than those in the public schools. The finding of the study was so because private schools are better organized in terms of academic activities than the public schools and also due to the proper management of, and well organized academic setting, students are motivated to learn in a well and rewarding academic environment than the environment where students are not properly controlled due to attitude of teachers which are mostly experienced in public schools. Private schools performed better both in the experimental and control groups. Also the null hypothesis of no significant difference between the mean knowledge scores of public and private secondary school students in both experimental and control groups after the intervention programme was rejected.

The findings of the study revealed to a large extent a positive effect of gerontology intervention programme. The improved attitude of the experimental group school showed that the programme was effective and a negative attitude was revealed among the control group school because of lack of intervention programme.

The finding of the study showed that male and female students in the experimental group had higher mean gained attitude scores than those in the control group; though the female students had higher mean gained attitude scores than the male students in experimental group. This is because the females are closer to the aged and elderly people than the male students; some of them are taken as nannies, house helps and servants to take care of the elderly people. The null hypothesis of no significant difference in the mean attitude scores of male and female secondary school students in both experimental and control groups after gerontology intervention programme was rejected.

The results of the study also showed that public and private schools students had higher mean gained attitude scores with the public schools higher than the private schools. This is because most of the students in the public schools live with either an aged person or an elderly person. Also the null hypothesis of no significant difference between the mean attitude scores of public and private secondary school students in both experimental and control groups before and after gerontology intervention programme was rejected.

Conclusion

Based on the findings of the study the following conclusions were made. Gerontology intervention programme is an effective way of educating students on issues related to ageing. The results of this study have established the fact that gerontology intervention programme has positive effect on ageing knowledge and attitude of secondary school students. A general increase in gerontology knowledge and attitudes mean scores of the students were observed after the intervention

programme which was showed in the mean gained scores especially the experimental group male and female students in the experimental group, the public and private secondary school students had a higher mean gained score: the mean goes for mean gained attitude scores of experimental group.

This increase in knowledge and attitude for the experimental group indicates the need that gerontology intervention programme should be discussed and taught in every school because that was the cause of low knowledge and negative attitude in the control group secondary school students.

Recommendations

The following recommendations were made based on the findings and conclusions of the study:

1)There is a great need to expose students to the issue of ageing because it will help to alleviate the fear of getting old in them.

2)Issues related to ageing should be discussed with children so that they could be of help to the older one not seeing it as punishment but as a stage in life.

3)Gerontology should be taught both formally and informally to children.

References

Farlex Free Dictionary (2019). *Educational programme*. Retrieved from https://www.the free dictionary.com Educational programme for providing education.

Portland Community College (2019). *Gerontology programme*. Retrieved from https://www.pcc.edu.

Okonkwor, O.C.N. (2015). *The secret of ageing and looking younger*. Calabar: Purplebird Media.

Area Agency on Ageing. (2013). *What is normal Ageing*? Retrieved from Ageing carefl.org/what-is-normal-ageing?

Davis,T. & Bennett, C.R. (2015). The importance of gerontology education starting early:framing the educational needs of the future. *The Gerontologist, Ss* (2); 798.https://doi.org/10.1093/geront/gnv432