

International Journal of Academic Research in Business, Arts and Science (IJARBAS)

ISSN: 2664-7354 (Online), 2708-2687 (Print)



IJARBAS

An Initiative of
**ThoughtWares Consulting & Multi
Services International(TWCMSI)**

Special issue

Issue: 9
Volume: 2
September: 2020

Email: editor.ijarbas@gmail.com
Website: www.ijarbas.com

Indexed and affiliated with organizations:



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IJARBAS
International Journal of Academic Research in
Business, Arts and Science(IJARBAS)
An European International Multidisciplinary Research Journal
(Indexed, Peer Reviewd, Open Access, European Multidisciplinary International Journal)
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INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS, ARTS AND SCIENCE

(IJARBAS (www.ijarbas.com)

**IJARBAS: An European International
Multidisciplinary Research Journal**

ISSN: 2664-7354 (Online), 2708-2687 (Print)

Impact Factor: SJIF = 5.476 (Year: 2020)





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SPECIAL ISSUE ON

Multidisciplinary Scientific Research in Business, Arts, Sciences and Social Sciences.

SEPTEMBER 2020

DOI NUMBER:

www.doi.org/10.5281/zenodo.4136416





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Editor in Chief: Dr. Rejaul Abedin, PhD, FCMAN

Impact Factor: 5.476 (Year 2020, SJIF)

Frequency: Monthly

Country: Austria

Language: English

Starting Year: 2019





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Assessment of Availability and Utilisation of Biology Resources for Secondary Schools in Southwest, Nigeria

AUTHOR(S): ADEUYA, Victoria Oluyemi (Ph.D),
AMIRE, Ayowumi Olubukola (Ph.D)

Abstract

The study assessed availability and utilisation of Biology resources for secondary schools in Southwest, Nigeria. The descriptive research design of the evaluative type was adopted for the study. The population of the study comprised all 1,851 Biology teachers in all the public secondary schools in Southwest, Nigeria. The sample for the study consisted of 180 biology teachers drawn from 90 public secondary schools in Southwest, Nigeria using multistage sampling procedure. Inventory on Biology Materials (IBM) was used for collecting the data for the study. The face and content validity of the instrument were ensured by presenting the instruments to specialist in the fields of Tests and Measurement, and Science Education. The reliability of the instrument was ascertained through the test re-test method which yielded reliability co-efficient value of 0.78. The data collected through the instruments was analyzed using descriptive and inferential statistics. The findings of the result revealed that most of the schools have functional laboratories but do not meet the recommended standard of at least 2 periods per week for practical work in Biology. Also, it was revealed that most of the

IJARBAS

Accepted 5 September 2020
Published 22 September 2020
DOI: 10.5281/zenodo.4044613



schools do not have all the recommended instructional materials while most of the teachers did not utilize the available instructional materials. It was further revealed that availability and utilization of instructional materials for teaching Biology do not differ in southwest Nigeria. It was recommended among others that the educational stakeholders should place greater emphasis on the provision of equipments and instructional materials needed for Biology teaching and practical work.

Keywords: Assessment, Availability, Utilisation, Biology Resources,

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Introduction

Biology is a significant science subject and an obligation for further learning of a number of science related expert courses like medicine, agriculture, pharmacy among others. Biology is also a vital science subject option for many students to please registration requirement at the Secondary School Certificate Examination (SSCE). In contemporary Nigeria, more emphasis is positioned on science and technological development. As a result, students are being encouraged to take up science-related subjects. Today, Biology saturates literally every field of human endeavour, and plays an essential role in educational advancement. This is seen in all the technologically advanced countries of the world today, as a result of scientific investigations.

Biology is a captivating subject that ranges from microscopic cellular molecules to the biosphere, surrounding the earth surface and its living organisms (Olayinka, 2016). Biology offers contents in the training of students who want to study medicine, nursing, pharmacy, forestry, fisheries and so on. Requirement of a credit pass and above in Biology is needed for science related discipline. Most of the senior secondary school students choose Biology as an option in the West African Senior School Certificate Examinations (WASSCE) or National Examination Council's Senior School Certificate Examinations (NECO SSCE). Even, for some students, Biology is a subject of first choice because they find it to be a stimulating subject being a subject that is more related to nature.

Biology laboratory is very vital in curriculum implementation as laboratory seems to be the most appropriate place to obtain the right scientific services and attitudes. In the laboratory, the student is given the opportunity to progress and practice the processes of science such as observations, communication, formulation of hypotheses, experimentation and classification. Though numerous schools in Nigeria have a general laboratory. The single laboratory is used for all sciences (Olayinka, 2016) such situation where a single ill-equipped room is being used as laboratory for all sciences would certainly be highly insufficient and inappropriate for efficient learning since each science subject has its own distinctiveness. Some of the schools that have distinct laboratory cannot boast of having suitable and modern equipment. laboratory apparatus are very vital to ease learning and improve the curriculum coverage in Biology.

There is a shortage in facilities in the laboratories as this could generate a gap in Biology curriculum implementation which may contribute to students' poor academic performance in Biology at the secondary school level. The researcher perceived that the few schools who can brag of a good laboratory do not appropriately utilized it for the improved performance of students. Laboratory attendants are conspicuously absent in most secondary schools. What they have are what they call substitutes (Ajayi, 2008). The so-called substitutes may not be efficient because it is difficult for one to give what he/she doesn't have. The resulting effect on students is that many of them cannot have access to most of the laboratory apparatus and not exposed to practical work in Biology which is a core area in the curriculum.

The teaching and learning instruction of Biology just like any other science subject demands energetic students contribution involving the use of material resources. However, the researcher perceived that crucial material resources are incompetently provided in both rural and urban secondary schools in Nigeria. The significance of instructional materials to the fruitful implementation of Biology curriculum cannot be overstressed. This is because the use of instructional materials is a sine qua non for effective behavioural change in learners (Jimoh, 2009). It seems that when the students are given the opportunity to learn through more senses than one, they can learn faster and easier.

The indispensability of instructional materials for teaching cannot be overstressed. Students seem to attain greater learning as evidence in attainment of cognitive and psychomotor services when instructional materials are used for instructional purpose. Therefore, one cannot distinct the influence of instructional materials availability from the performance of school students in Biology. In spite of the importance placed on the worth of instructional materials in Biology teaching and learning process, it seems that most teachers still finds it hard to make use of instructional materials in the classroom.

The researchers also perceived that the instructional materials that should improve Biology teaching which will accumulate into better academic performance appear not provided as required. The

needed steps and efforts required from Biology teachers as ingredients for teaching efficiency appear to be lacking and this could also add to poor implementation of the Biology curriculum. The sufficiency of instructional materials as well as their effective utilization has been a matter of serious concern to educators. The utilization of instructional materials in Biology could bring about productive learning outcomes since it stimulates and motivates students.

Based on the foregoing, this study assessed availability and utilisation of Biology resources for secondary schools in Southwest, Nigeria. The study specifically examined:

- i. the level of availability of functional Biology laboratories in secondary schools;
- ii. the depth of practical work done in Biology in schools;
- iii. the level of availability of instructional materials;
- iv. how Biology teachers utilize the available instructional materials for teaching and learning of Biology;
- v. the difference in the availability of instructional materials for teaching Biology among the three states; and
- vi. the difference in the utilization of instructional materials for teaching Biology among the three states.

Research Questions

The following research questions were raised for this study:

1. What is the level of availability of functional Biology laboratories in secondary schools?
2. What is the level of practical activities done in Biology curriculum in the schools?
3. What is the level of availability of instructional materials for teaching Biology in the schools?
4. How often do the Biology teachers utilize the available instructional materials for teaching and learning Biology?

Research Hypotheses

The following research hypotheses were generated for this study

1. There is no significant difference in the availability of instructional materials for teaching Biology among the selected three states in Southwest, Nigeria.
2. There is no significant difference in the utilization of instructional materials for teaching Biology among the selected three states in Southwest, Nigeria.

Methodology

The descriptive research design of the evaluative type was adopted for the study. The design was chosen to present the evaluative data to be collected for the study. The design allowed information to be obtained from a representative sample of the population in the actual situation as they exist. The population of the study comprised all 1,851 Biology teachers in all the public secondary schools in Southwest, Nigeria. The states in South West of Nigeria are Lagos, Ogun, Oyo, Osun, Ondo and Ekiti. The total number of Biology teachers in public secondary school in Lagos State is 329, Ogun State is 308, Oyo State is 417, Osun State is 274, Ondo State is 257 while Ekiti State is 266 (**Source:** States Ministries of Education, 2019).

The sample for the study consisted of 180 biology teachers drawn from 90 public secondary schools in Southwest, Nigeria using multistage sampling procedure. In stage one, three out of six states in the Southwest, Nigeria, were selected through random sampling technique by balloting. The second stage involved the selection of six Local Government areas from each of the selected states using simple random sampling technique. In stage three, five public secondary schools were selected from each of the sampled Local Government areas using simple random sampling technique. In stage four, two Biology teachers were selected from each of the schools using purposive sampling technique. In all, 180 teachers were drawn from 90 secondary schools in 18 Local Government of 3 states in South West, Nigeria.

Inventory on Biology Materials (IBM) was used for collecting the data for the study. It consisted of

section A and B. Section A consisted of bio-data of the respondents while section B contained 30 items which checked the availability and utilization of instructional materials for Biology teaching. The availability aspect of the inventory has three options as follows: Adequate, Inadequate and Not available. Schools with the recommended numbers of instructional materials are classified as adequate while schools without the recommended numbers are classified as inadequate and schools without any of the materials are classified as not available. The utilization aspect of the inventory also has three options as follows: Frequently Used (FU), Hardly Used (HU) and Not Used (NU).

The face and content validity of the instrument were ensured by presenting the instruments to specialist in the fields of Tests and Measurement, and Science Education. To ensure face validity of the instruments, the experts helped to determine the face value of the appropriateness of the instruments. To ensure content validity, the experts checked the items and ascertained that the items represented the variable specified in the research questions. The reliability of the instrument was ascertained through the test re-test method. In doing this, a study was carried out in 5 secondary schools outside the sampled schools. The instrument was administered on 10 biology teachers and within a period of two weeks, the instrument was re-administered on the same respondents. The data collected on the two tests were correlated using Pearson's Product Moment Correlation statistics which yielded reliability co-efficient value of 0.78 which was considered high enough to make the instruments reliable.

The data collected through the instruments was analyzed using descriptive and inferential statistics. The evaluation questions were answered using frequency counts, percentages, means and standard deviation. All the hypotheses were tested using Analysis of Variance (ANOVA) statistics at 0.05 level of significance.

Results

Question 1: What is the level of availability of functional Biology laboratories in secondary schools?

Table 1: Frequency and Percentage Analysis of Availability of functional Biology Laboratories

Level of Availability	Available	Not Available	Total
No of Schools	59	31	90
Percentage	65.6	34.4	100

Table 1 showed availability of functional Biology laboratories in secondary schools. Out of the 90 secondary schools, 59 secondary schools representing 65.6% had functional Biology laboratory while 31 secondary schools representing 34.4% do not have a Biology laboratory. It means that the level of availability of functional Biology laboratories was moderate. Figure i further showed the availability of Biology laboratories in secondary school.

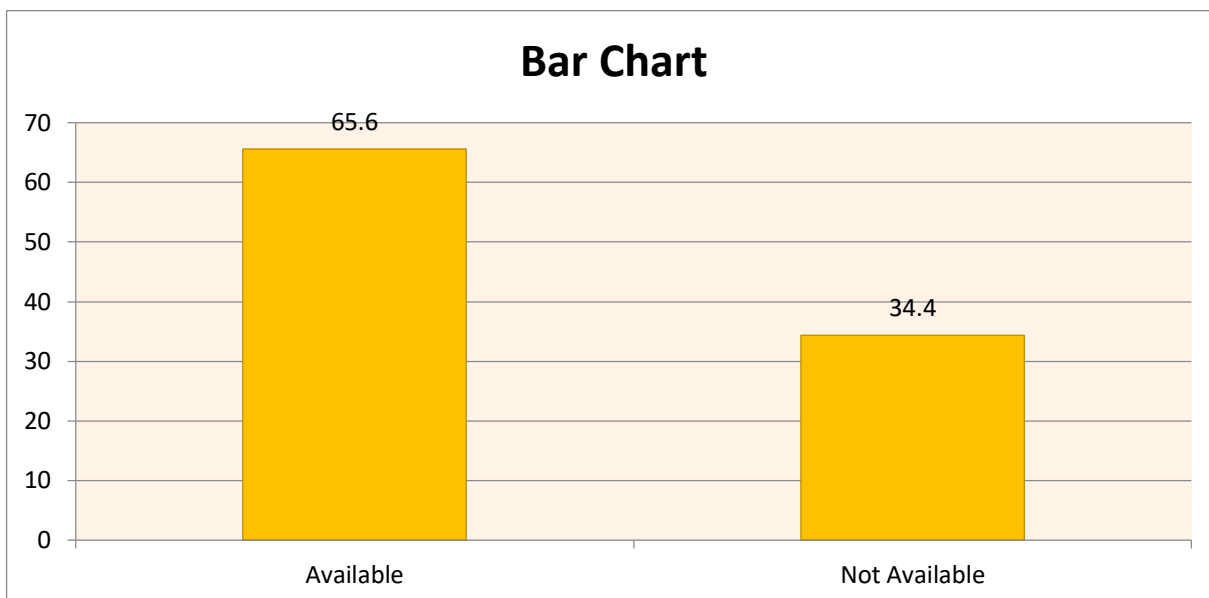


Figure i: Bar Chart Showing Availability of Functional Biology Laboratories

The graph showed that 65.6% of the secondary schools had functional Biology laboratory while 34.4% of the secondary schools do not have a Biology laboratory. Therefore the level of availability of functional Biology laboratories in secondary school is moderate.

Question 2: What is the depth of practical work done in Biology in secondary schools?

Table 2: Frequency and Percentage Analysis of Practical Work in Biology Per Week

Period	None	1	2	3	Total
No of School	28	51	11	-	90
Percentage	31.1	56.7	12.2	0	100

Table 2 showed that 28 (31.1%) of the schools sampled had no period for teaching of practical work in Biology while 51 (56.7%) of the schools sampled do practical only once per week and 11 (12.2%) of the schools sampled do practical work twice per week. Hence, most of the schools do not meet the recommended standard of at least 2 periods per week for practical work in Biology given by Federal Ministry of Education (2013). It follows that the period for practical work in Biology was low

Research Question 3: What is the level of availability of instructional materials for teaching Biology?

Table 3: Frequency and Percentage analysis of availability of instructional materials

S/N	Topics	Adequate		Inadequate		Not Available	
		N	%	N	%	N	%
1.	Biology Laboratory	59	65.56	0	0.00	31	34.44
2.	Refrigerator	12	13.33	0	0.00	78	86.67
3.	Charts	38	42.22	33	36.67	19	21.11
4.	Beakers	53	58.89	28	31.11	9	10.00
5.	Burners	49	54.44	29	32.22	12	13.33
6.	Gas Cylinders	51	56.67	21	23.33	18	20.00
7.	Microscopes	39	43.33	37	41.11	14	15.56
8.	Dissecting Boards	58	64.44	19	21.11	13	14.44
9.	Hand lens	52	57.78	26	28.89	12	13.33
10.	Mammalian bones	64	71.11	17	18.89	9	10.00
11.	Jars	54	60.00	22	24.44	14	15.56
12.	Conical flasks	56	62.22	24	26.67	10	11.11

13.	Stop watch	50	55.56	31	34.44	9	10.00
14.	Spring Balance	64	71.11	0	0.00	26	28.89
15.	Test tubes	47	52.22	29	32.22	14	15.56
16.	Pipettes	41	45.56	37	41.11	12	13.33
17.	Thermometer	38	42.22	41	45.56	11	12.22
18.	Tripod and Clamp stand	43	47.78	36	40.00	11	12.22
19.	Weighting balance	51	56.67	0	0.00	39	43.33
20.	Metre rules	37	41.11	23	25.56	30	33.33
21.	Retort stand	42	46.67	21	23.33	27	30.00
22.	Hydrochloric acid	38	42.22	0	0.00	52	57.78
23.	Other acids	51	56.67	17	18.89	22	24.44
24.	Other Bases	48	53.33	19	21.11	23	25.56
25.	Disposable hand gloves	21	23.33	26	28.89	43	47.78
26.	Textbooks	57	63.33	33	36.67	0	0.00
27.	Methylated water	39	43.33	22	24.44	29	32.22
28.	Iodine solution 2	40	44.44	27	30.00	23	25.56
29.	Benedict solution	29	32.22	42	46.67	19	21.11
30.	Fehling Solution	33	36.67	37	41.11	20	22.22
	Average	45	50.15	23	25.81	22	24.04

Table 3 showed the level of availability of instructional materials during teaching in Biology. It was revealed that the schools who had adequate Biology laboratory, refrigerator, charts, beakers, burners, gas cylinders and microscopes were 65.56%, 13.33%, 42.22%, 58.89%, 54.44%, 56.67% and 43.33% respectively. It also showed that the school who had adequate dissecting boards, hand lens, mammalian bones, jars, conical flasks, stop watch, spring balance and test tubes were 64.44%, 57.78%, 71.11%, 60.00%, 62.22%, 55.56%, 71.11% and 52.22% respectively.

The study further showed that the schools who had adequate pipettes, thermometer, tripod and clamp stand, weighting balance, metre rules, retort stand, hydrochloric acid, other acids and other bases were 45.46%, 42.22%, 47.78%, 56.67%, 41.11%, 46.67%, 42.22%, 56.67%, and 53.33% respectively. It was showed that the school who had adequate disposable hand gloves, textbooks, methylated water, iodine solution 2, benedict solution and fehling solution were 23.33%, 63.33%, 43.33%, 44.44%, 32.22% and 36.67% respectively.

Schools with the recommended numbers of instructional materials are classified as adequate while schools without the recommended numbers are classified as inadequate and schools without any are classified as not available. The table revealed that less than 75% of the sampled schools have adequate instructional materials. The table also revealed that the highest adequately available materials are the spring balance and mammalian bones with 71.11% of the sampled schools having both in their laboratory. The least adequately available material is refrigerator with only 13.3% of the sampled schools it in their laboratory.

The table showed that 50.15% of the sampled schools had adequate availability of instructional materials which implies that the level of availability of instructional materials for teaching Biology is moderate.

Research Question 4: How often do the Biology teachers utilize the available instructional materials for teaching and learning of Biology?

Table 4: Frequency and Percentage analysis of utilization of instructional materials

S/N	Topics	Frequently Used		Hardly Used		Not Used	
		N	%	N	%	N	%
1.	Biology Laboratory	47	52.22	12	13.33	31	34.44
2.	Refrigerator	12	13.33	0	0.00	78	86.67
3.	Charts	27	30.00	44	48.89	19	21.11
4.	Beakers	31	34.44	39	43.33	20	22.22

5.	Burners	13	14.44	42	46.67	35	38.89
6.	Gas Cylinders	11	12.22	56	62.22	23	25.56
7.	Microscopes	18	20.00	54	60.00	18	20.00
8.	Dissecting Boards	17	18.89	50	55.56	23	25.56
9.	Hand lens	21	23.33	51	56.67	18	20.00
10.	Mammalian bones	41	45.56	39	43.33	10	11.11
11.	Jars	29	32.22	39	43.33	22	24.44
12.	Conical flasks	29	32.22	40	44.44	21	23.33
13.	Stop watch	12	13.33	59	65.56	19	21.11
14.	Spring Balance	23	25.56	35	38.89	32	35.56
15.	Test tubes	22	24.44	39	43.33	29	32.22
16.	Pipettes	19	21.11	43	47.78	28	31.11
17.	Thermometer	27	30.00	38	42.22	25	27.78
18.	Tripod and Clamp stand	23	25.56	42	46.67	25	27.78
19.	Weighting balance	18	20.00	28	31.11	44	48.89
20.	Metre rules	39	43.33	19	21.11	32	35.56
21.	Retort stand	19	21.11	25	27.78	46	51.11
22.	Hydrochloric acid	8	8.89	19	21.11	63	70.00
23.	Other acids	13	14.44	38	42.22	39	43.33
24.	Other Bases	15	16.67	34	37.78	41	45.56
25.	Disposable hand gloves	5	5.56	17	18.89	68	75.56
26.	Textbooks	78	87.64	11	12.36	0	0.00
27.	Methylated water	44	48.89	11	12.22	35	38.89
28.	Iodine solution 2	28	31.11	21	23.33	41	45.56
29.	Benedict solution	21	23.33	32	35.56	37	41.11
30.	Fehling Solution	19	21.11	42	46.67	29	32.22
	Average	24	27.03	34	37.75	32	35.22

Table 4 showed the utilization of the available instructional materials during teaching in Biology. It showed that the schools who frequently use Biology laboratory, refrigerator, charts, beakers, burners, gas cylinders and microscopes were 52.22%, 13.33%, 30.00%, 34.44%, 14.44%, 22.22% and 20.00% respectively. It also showed that the school who frequently use dissecting boards, hand lens, mammalian bones, jars, conical flasks, stop watch, spring balance and test tubes were 18.89%, 23.33%, 45.56%, 32.22%, 32.22%, 13.33%, 25.56% and 24.44% respectively.

The study further showed that the schools who frequently use pipettes, thermometer, tripod and clamp stand, weighting balance, metre rules, retort stand, hydrochloric acid, other acids and other bases were 21.11%, 30.00%, 25.56%, 20.00%, 43.33%, 21.11%, 8.89%, 14.44%, and 16.67% respectively. It showed that the school who had adequate disposable hand gloves, textbooks, methylated water, iodine solution 2, benedict solution and fehling solution were 5.56%, 87.64%, 48.89%, 31.11%, 23.33% and 21.11% respectively.

The table showed that textbooks are the only materials fully utilized by over 50% of the sampled schools as other materials are not fully utilized by over 50% of the sampled schools. The table also showed that the highest fully utilized material by the sampled schools is textbooks with 87.64% of the sampled schools fully utilized it. The least fully utilized material is disposable hand gloves with only 5.56% of the sampled schools fully utilized it.

The table above showed that only 27.03% of the sampled schools frequently utilize the instructional materials which implies that the level of utilization of instructional materials is low.

Testing of Hypotheses

Hypothesis 1: There is no significant difference in the availability of instructional materials for teaching Biology among the selected three states in Southwest, Nigeria.

Table 5: Analysis of Variance for availability of instructional materials for teaching Biology among the three states

Groups	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.200	2	6.100	0.534	.588
Within Groups	994.700	87	11.433		
Total	1006.900	89			

$P > 0.05$

The result presented in table 5 showed that F-cal value of 0.534 is not significant because the P value (0.588) > 0.05 at 0.05 level of significance. Hence, the null hypothesis is not rejected. This implies that there is no significant difference in the availability of instructional materials for teaching Biology among the three states.

Hypothesis 2: There is no significant difference in the utilization of instructional materials for teaching Biology among the selected three states in Southwest, Nigeria.

Table 6: Analysis of Variance for utilization of instructional materials for teaching Biology among the three states

Groups	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.756	2	.878	0.055	.947
Within Groups	1392.200	87	16.002		
Total	1393.956	89			

$P > 0.05$

The result presented in table 6 showed that F-cal value of 0.055 is not significant because the P value (0.947) > 0.05 at 0.05 level of significance. Hence, the null hypothesis is not rejected. This implies that there is no significant difference in the utilization of instructional materials for teaching Biology among the three states.

Discussion

The findings of the study showed that over half of the secondary schools in Southwest, Nigeria had functional Biology laboratories but most of the schools do not meet the recommended standard of at least 2 periods per week for practical work in Biology, so the depth of practical work in Biology was low. This implies that there were not enough periods in the school time-table to cater for practical aspect of Biology. The only available periods cater for the theoretical aspect and this could justify the reason why most Biology teachers use the periods for Biology theories alone. Okebukola and Akinbola (2008) and Nwagbo (2008) concluded that one of the major challenges militating against the implementation of the Biology curriculum is lack of practical teaching of Biology. The above findings about not giving Biology enough time are true because almost all the topics in Biology subject require practical. After teaching the theory part of it; then there is need to take the students to the laboratory to do the practical. But you find out that in most times, there is no time to teach the students the practical aspect of Biology.

The result of this study also showed that most of the schools do not have all the instructional materials as they all fall below the recommendation standard by Federal Ministry of Education (2014). This implies that instructional materials were not adequate for the implementation of national Biology curriculum. Instructional materials seem not to be adequate in most of our secondary schools, thereby affecting the achievement of the content of the national Biology curriculum. Most Biology teachers have been teaching Biology without the necessary instructional materials. This present finding is in consonance with the findings of Folorunso (2004) who concluded that there is lack of adequate and appropriate instructional resources for effective teaching of Biology in schools.

The study also showed that most of the teachers did not utilize the available instructional materials as recommended by Federal Ministry of Education (2014) for the implementation of the Biology curriculum. This implies that the available instructional materials are lowly utilized by Biology teachers. This finding agreed with the conclusion of Okebukola (2004) who concluded that the poor state of laboratory facilities and inadequate use of instructional materials has constituted a cog in the wheel of

adequate implementation of the curriculum. Ibitoye and Fape (2007) concluded that the poor achievement in Biology was traced to inadequate usage of instructional resources for Biology teaching and learning.

The study also showed that there was no significant difference in the availability and utilization of instructional materials for teaching Biology among the three states. This implies that the level of availability and level of utilization of instructional materials in public secondary schools of the sampled three states are not different. The finding is in consonance with the submission of Folorunso (2004) who also found out that there were no differences in the availability and utilization of instructional materials in most of the public schools.

Conclusion

Sequel to the findings of this study, it was concluded that most of the schools have functional laboratories but do not meet the recommended standard of at least 2 periods per week for practical work in Biology. Most of the schools do not have all the recommended instructional materials while most of the teachers did not utilize the available instructional materials. It was further concluded that availability and utilization of instructional materials for teaching Biology do not differ in southwest Nigeria.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The educational stakeholders should place greater emphasis on the provision of equipments and instructional materials needed for Biology teaching and practical work in Biology
2. Biology teachers should always use the instructional materials while teaching so as to ensure adequate implementation of the national Biology curriculum.
3. School administrators should ensure that only qualified teachers are recruited to teach Biology in senior secondary schools. Qualified and sufficient numbers of dedicated teachers are needed to teach the contents of the curriculum.

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Cite this article:

Author(s), ADEUYA, Victoria Oluyemi (Ph.D), AMIRE, Ayowumi Olubukola (Ph.D), (2020). "Assessment of Availability and Utilisation of Biology Resources for Secondary Schools in Southwest, Nigeria". Name of the Journal: International Journal of Academic Research in Business, Arts and Science, (IJARBAS.COM), P, 10- 21. DOI: <http://doi.org/10.5281/zenodo.4044613> , Special Issue: 9, Vol.: 2, Article: 1, Month: September, Year: 2020. Retrieved from <https://www.ijarbas.com/all-issues/>

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Spousal Approval and Acceptance of Caesarean Section Among Women in Comprehensive Health Centres in Ondo State

AUTHOR(S): ADIGUN, Mary Opeyemi (RN, RPON, BNSc, PGDE, M.Sc)

Abstract

There are many scenarios and anecdotal reports in the hospitals, showing maternal mortality due to refusal in consenting to Caesarean section. Therefore, the study examined spousal approval and acceptance of caesarean section among women in comprehensive health centres in Ondo state. The study adopted a descriptive research design of the survey type. The study populations were women of Reproductive age from Comprehensive Health Centres in Ondo State. The total sample size of 400 women was selected but 385 questionnaires were retrieved. Convenient sampling technique was used to select participants for this study. A Self-designed questionnaire was developed by the researcher to collect data from the respondent. The face and content validity of the instrument was ensured by experts of Nurse Education and Tests & Measurement. The Cronbach's Alpha analysis yielded an alpha value of 0.893, thus the instrument was said to be reliable. Data generated from the study were analyzed using descriptive and inferential statistics. From the findings of the study, 145(37.7%) indicated that their husbands and family cannot allow them to undergo CS, while 228(59.2%) accepted that there in-laws will only accept vagina delivery. The percentile rate of acceptance of CS was 41.8%. 59.2% accepted that their In-law will only accept vaginal delivery, the spousal approval on the acceptance of CS was also statistically significant ($P=0.021$). It was recommended among others that the right of women in choosing and participating actively in decision making for their mode of delivery should be emphasized in hospitals and broadcasted in mass media as well as promoted to conscious attention.

IJOBAS

Accepted 5 September 2020
Published 22 September 2020
DOI 10.5281/zenodo.4044631:



Keywords: Spousal Approval, Acceptance, Caesarean Section, Women,

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Introduction

Caesarean section (CS) is a life-saving obstetric surgery, it has been defined as delivery of a fetus through a surgical incision into the uterine wall after 28 weeks of gestation, which may be necessitated (sometimes the only feasible option) in high risk pregnancies. These are those with multiple/ large fetuses, breech presentations, obstructed labour, previous caesarean section, Cephalopelvic disproportion, fetal distress, failed induction, previous reconstructive vaginal surgery, abnormal presentation, multiple gestation in excess of three and above. Others include macrosomic baby, fetal abnormality, obstructive pelvic tumors, severe preeclampsia with unfavorable cervix, previous classical CS, major placenta praevia. Other indications are retained second twin, bad obstetrics history, maternal request, prematurity, cord prolapsed, abruption with live fetus as well as in women with transmissible infections such as vulva Herpes, HIV/AIDS prevention of mother to child transmission (PMTCT) (Adewuyi, Auta, Khanal, Samson & Zhao, 2019). Indication for CS can be either Elective or Emergency, in elective a woman have enough time for preparation but for Emergency, decision making must be fast.

In a study by Robinson-Bassey and Uchebgu (2017), CS is seen as a curse on an unfaithful woman and the weak women. It is still believed that these women are lesser than their fellow women, they are believed to be under some sort of punishment by the gods or seen and labeled as the less righteous and faithless woman. Women in less developed countries often think that caesarean section signifies reproductive failure. It is usually bad news for them when told that they will be delivered through Caesarean section. For those that will eventually give their consent, it is done with so much unnecessary delay. This little time between counselling and giving consent for caesarean section may be important in clinical practice for conditions such as foetal distress and antepartum haemorrhage that require emergency Caesarean section. With a positive perception of caesarean section, it is expected that the decision-delivery interval will be reduced (Ezeonu, Ekwedigwe, Isikhuemen, Eliboh, Onoh, Lawani, Ajah & Dimejesi, 2017).

In Nigeria, it has been recorded that women reluctantly accept CS even in the face of obvious clinical indications. The trend of acceptability and the rate of CS have been on the increase in the developed countries in the past two decade, conversely in developing country like Nigeria the rate is sluggish (Owonikoko, Akinola, Adeniji & Bankole, 2015). African has the second highest rate of maternal mortality and the poor utilization of surgical method of delivery is one of the reasons for their high maternal mortality rate (Utuk, Abasiatta, Ekanem, & Nyoyoko, 2018). In 1985, the World Health Organization considers that the best caesarean section rate is between 10-15%. However, the World Health Organization (2015) has since modified this particular recommendation. Stating that the optimum rate is unknown and asserts that the procedure should be done when it is absolutely necessary, in order to reduce maternal mortality rate. Recently, the European Board and College of Gynecology and Obstetrics (EBCOG) in EBCOG survey 2017, it was discovered that only few countries of European Union have less than 20%. In Northern America the increase is rated to be 10% thus the rise is from 22.3% to 32.3%, while in Africa the increase was just 4.5%, from 2.9% to 7.4%. This is due to refusal and underutilization of CS, which is one of the reasons for increment in maternal mortality (Betran , Torloni & Zang 2016).

There are many scenarios and anecdotal reports in the hospitals, showing maternal mortality due to refusal in consenting to Caesarean section. Some disheartening occurrences where there were maternal and fetal mortalities, some of these mothers left behind a young child or children to suffer all in the name of "I must deliver as a Hebrew woman". The researcher witnessed a scenario; 5th of June 2016, at State Specialist Hospital Akure, Mrs B.B a trader, 42 years old Primigravida refuses emergency CS. The husband believed God cannot be wicked to them and allow his wife to have their first child through CS, also no one has ever had CS in their family. Unfortunately, the baby died in utero and same CS was done to bring out the dead baby because it is transverse lie. These and many other occurrences have prompted the researcher to research on spousal approval and acceptance of caesarean section among women in comprehensive health centres in Ondo state. The study specifically examined:

- i. the influence of Spouse Approval on acceptance of CS among women in comprehensive health centres;

- ii. the acceptance rate of CS among women in comprehensive health centres; and
- iii. the influence of spouse approval on acceptance of CS among women in comprehensive health centres in Ondo state.

Research Questions

The study has the following research questions:

1. What is the influence of Spouse Approval on acceptance of CS among women in comprehensive health centres in Ondo state?
2. What is the acceptance rate of CS among women in comprehensive health centres in Ondo state?

Research Hypothesis

This hypothesis was generated for this study:

1. There is no significant influence of spouse approval on acceptance of CS among women in comprehensive health centres in Ondo state

Methodology

The study adopted a descriptive research design of the survey type. The study populations were women of Reproductive age from Comprehensive Health Centres in Ondo State. The total sample size of 400 women was selected but 385 questionnaires were retrieved. Convenient sampling technique was used to select participants for this study.

A Self-designed questionnaire was developed by the researcher to collect data from the respondent. It consisted of three sections; section A sought for demographic characteristics of the respondents while section B consisted of items on spouse approval of CS and section C consisted of items on acceptance of CS. The face and content validity of the instrument was ensured by experts of Nurse Education and Tests & Measurement. After the experts had appraised, they ascertained that the instruments could elicit adequate information to achieve the stated objectives. Reliability of the instrument was carried out through a pilot study among 40 respondents. The Cronbach's Alpha analysis yielded an alpha value of 0.893, thus the instrument was said to be reliable.

Data generated from the study were analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage were used to answer the research questions while inferential statistics using regression was used to test the only hypothesis at 0.05 level of significance.

Inclusion and Exclusion Criteria

Inclusion Criteria: Women that are within the reproductive age who indicated an interest to participate. Exclusion Criteria: Men were excluded from the sample and also mothers who did not want to participate. Menopausal women were also excluded

Results

Research Question 1: What is the influence of Spouse Approval on acceptance of CS among women in comprehensive health centres in Ondo state?

Table 1: Respondents Responses on Spouse Approval as a Factor Affecting CS

S/N	Items	SA N %	A N %	D N %	SD N %
1.	My husband and family cannot allow me to undergo CS	45 11.7	100 26.0	140 36.3	100 26.0
2.	Undergoing CS can make someone's husband remarry.	62 16.1	62 16.1	140 36.4	121 31.4
3.	My in-law will only accept vaginal delivery	128 33.2	100 26.0	62 16.1	95 24.7

Table 1 shows responses to society and spousal approval. The findings revealed that 45(11.7%) of the respondents strongly agree that their husband and family cannot allow

them to undergo CS, 100(26.0%) agree, 140(36.3%) disagree, and 100(26.0%) strongly disagree that their husband and family cannot allow them to undergo CS. Further, when asked 62(16.1%) of the respondents strongly agree that undergoing CS can make someone's husband remarry, 62(16.1%) agree, 140(36.4%) disagree, and 121(31.4%) strongly disagree that undergoing CS can make someone's husband remarry. The findings revealed that 128(33.2%) of the respondents strongly agree that their in-law will only accept vaginal delivery, 100(26.0%) agree, 62(16.1%) disagree, and 95(24.7%) strongly disagree that their in-law will only accept vaginal delivery.

Research Question 2: What is the acceptance rate of CS among women in comprehensive health centres in Ondo state?

Table 2: Respondents Acceptance of CS among women in comprehensive health centres in Ondo state

S/N	Items	Yes N %	No N %	Mean	Acceptance Rate
1.	It is the right of the woman to choose her method of delivery	305 79.2	80 20.8	0.79	41.8%
2.	I will have a CS based on the Doctor advice	161 41.8	224 58.2	0.42	
3.	I had babies already through vaginal delivery, I don't need CS	322 83.6	63 16.4	0.84	

Table 2 shows respondent acceptance of CS responses. The findings revealed that 305(79.2%) of the respondents indicated Yes that it is the right of the woman to choose her method of delivery, while 80(20.8%) indicated No. Further, 161(41.8%) of the respondents indicated that they will have a CS based on Doctors' advice, 224(58.2%) indicated that they will not have a CS based on Doctors' advice. The findings further revealed the number of respondents that indicated Yes to the statement "I had already babies through vaginal delivery, I don't need CS" were 322(83.6%), those that indicated No was 63(16.4%). The acceptance rate was 41.8%

Testing of Hypothesis

Hypothesis 1: There is no significant influence of Spouse Approval on acceptance of CS among women in comprehensive health centres in Ondo state.

Table 3: Result of Binary Logistic Regression Between spouse approval and Acceptance of CS

Constant	Chi-Square	Model Summary Cox & Snell R ² Nagelkerke R ²	Predicted (Percentage)	B Exp(B)	Significance
-.330	-21.329	0.055 0.073	59.2	0.114 0.892	P = 0.031 P < 0.05

Table 4: Model summary of Linear Regression between Acceptance of CS and spouse approval

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467 ^a	.218	.212	.415
a. Predictors: (Constant) spousal approval				
b. Dependent Variable: acceptance of CS				

Table 5: ANOVA analysis between Acceptance of CS and spouse approval

ANOVA ^a						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.348	3	6.116	35.459	.000 ^b
	Residual	65.714	381	.172		
	Total	84.062	384			
a. Dependent Variable: acceptance of CS						
b. Predictors: (Constant) spouse approval						

Table 6: Coefficient of Regression between Acceptance of CS and spouse approval

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.216	.057		21.438	.000
	My husband and family cannot allow me to undergo CS	-.141	.031	-.300	-4.597	.000
	Undergoing CS can make someone's husband remarry	-.061	.026	-.134	-2.322	.021
	My in-law will only accept Vaginal delivery	-.044	.030	-.099	-1.454	.147
Dependent Variable: acceptance of CS						

From Table 4.12 (a-c), the result of the linear regression analysis between spouse/significant others decision and acceptance of CS showed that there is significant relationship between spouse/significant others' decision and acceptance of CS; $F(3, 381) = 35.459, p = 0.000$. Regression analysis showed that spousal decisions influence acceptance of CS ($p = 0.000, 0.021$). Thus, the null hypothesis which says there is no significant influence between spouse/significant others' decisions and acceptance of CS is rejected.

Discussion

The findings revealed that 128(33.2%) of the respondents strongly agree that their in-law will only accept vaginal delivery and another 100(26.0) agree. This finding is in line with Ugwu and De-Kok (2015) study that there are restrictive gender roles in decision making about CS between women and their spouses and mothers-in-law roles in decision making. A woman who delivered by CS is seen by the husband and the in-law as an incompetent woman and the husband will need to marry another woman, who is believed to be competent because she can deliver per vagina. This finding were also confirmed by the 62(16.1%) and 62(16.1%) of the respondents in this study that strongly agree and agree respectively that undergoing CS can make someone's husband remarry.

The work of Anyasor and Adetuga (2017), is in line with this as 39 (37.9%) respondents believed that having a caesarean section can make someone's husband to re-marry, while the study of Owonikoko, Akinola, Adeniji and Bankole (2015), confirmed this trend of negative reactions from relatives. 45(11.7%) and 100(26.0%) of the respondents strongly agree and agree respectively that their husbands and family cannot allow them to undergo CS. This is in line with Amiegheme, Adeyemo and Onasoga (2016), where 82% objected CS due to family preference of vaginal delivery. This may not be entirely surprising as the majority of decisions are often left for the men who are believed to be the

head of the family.

Interestingly, Ezeonu, et al., (2017) affirm that a good number of women (66.5%) believe their husbands should be the one to give consent for caesarean section. This is not entirely surprising in this setting as the majority of decisions are often left for the men who are believed to be the head of the family. Anyasor and Adetuga's (2017) study findings supported this with the finding that husband's preference for vaginal delivery seems to be a major factor that hinders the acceptance of Caesarean section as majority 73 (70.9%) of the respondents agreed to it. This was also supported by Ezeome, Ezugworie and Udealor (2018), where 164 (82%) of women will agree to a Caesarean delivery if their husbands consent despite their own personal disapproval because he is the head of the family, About a tenth of the women in the study are of the view that women should take the decision solely on her own. These points out that psychological support and financial need may be responsible for this outcome.

The findings of this study shows that 41.8% of the participants will accept a CS if the doctor advised it. This figure amount to 161 of the respondents, this acceptance rate is lower to other acceptability rates that have been recorded in recent studies. This is pointing to an underutilization of this vital procedure when compared to the large burden of obstetric morbidity requiring resolution by Caesarean section. Specifically, the study is in tandem with earlier reports of Faremi, Ibitoye, Olatubi, Koledoye & Ogbeye (2014), where 42.9% said they will agree if given the option of Caesarean section for their next delivery, also Olofinbiyi, Olofinbiyi, Aduloju, Atiba, Olaogun & Ogundare (2015), showed that majority (69.2%) would accept a repeat Caesarean section. There is also a higher acceptance rate observed by Prah, Kudom, Lasim & Abu (2017) and Anyasor and Adetuga (2017), where majority 94.6% and 92.2% of the pregnant women said they would agree to Caesarean birth if indicated for them respectively. It is however sad that some women will insist on vaginal delivery even when contra-indicated and not safe for their health and that of the unborn baby even despite repeated counselling on the potential danger of such action.

The study revealed that there is significant influence of spouse approval on the acceptance of CS based on women of reproductive age. These findings did not differs from the findings of Ugwu and De-Kok, (2015) that the husband makes the decision for the wife, and Ezeonu et al. (2017) posits that a good number of women believe their husbands should be the one to give consent for Caesarean section. Anyasor and Adetuga (2017) said husband's preference for vaginal delivery seems to be a major factor that hinders the acceptance of Caesarean section.

Conclusion

The study concludes that there are concerns about the high cost of CS, refusal of husband and in-laws in consenting to CS is also a militating factor faced by these women even at the detriment of their own lives. The rate of CS acceptance of CS in the study was 41.8%. This confirms that there is an underutilization of this vital procedure when compared to the large burden of obstetric morbidity requiring resolution by Caesarean section. It was also concluded that there is influence of spouse approval on the acceptance of CS based on women of reproductive age.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The right of women in choosing and participating actively in decision making for their mode of delivery should be emphasized in hospitals and broadcasted in mass media as well as promoted to conscious attention. Empowering women to take decisions that will be to the best of their interest is a key.
2. Since husbands and in-laws were mentioned as a determinant in CS acceptance, men should be encouraged to participate in the antenatal care of their wives as well as seminars that involve maternal health.
3. Nurses and midwives should explain carefully the benefits and the possible risks/complications associated with CS to clients at the antenatal clinic. All available birthing methods should also be explained giving the merit and demerits to the clients during antenatal clinic sessions.

Implication of Findings to Nurses

There are implications of this finding to nursing practice in Nigeria and beyond. There is a need for nurses to be more sensitive and aware of the patient's challenges. Also, frequent empathic conversations with reproductive women on CS will bridge the knowledge gap among them. Nurses and midwives should explain carefully the benefits and the possible risk and complications associated with CS to clients at the antenatal clinic. All available birthing methods should also be explained giving the merit and demerits to the clients during antenatal clinic sessions. This means nurses need to move away from the traditional way of top-bottom thinking to horizontal and participatory thinking. This also embraces the need of applying a research-based understanding of CS in nursing and midwifery education by incorporating knowledge on the need to teach expectant mothers on birthing methods, their effects, and the need to accept the best method for them. This knowledge can be extended to manners that are culturally effective and congruent in Nigeria or African setting.

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Cite this article:

Author(s), ADIGUN, Mary Opeyemi (RN, RPON, BNSc, PGDE, M.Sc), (2020). “Spousal Approval and Acceptance of Caesarean Section Among Women in Comprehensive Health Centres in Ondo State”. Name of the Journal: *International Journal of Academic Research in Business, Arts and Science*, (IJARBAS.COM), P, 22- 31. DOI: <http://doi.org/10.5281/zenodo.4044631> , Special Issue: 9, Vol.: 2, Article: 2, Month: September, Year: 2020. Retrieved from <https://www.ijarbas.com/all-issues/>

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Knowledge, Attitude and Practices Towards Modifiable Risk Factors for Hypertension Among Civil Servants in Akure Municipality, Ondo State, Nigeria

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Abstract

This study investigated knowledge, attitude and practices towards modifiable risk factors for hypertension among civil servants in Akure municipality, Ondo State, Nigeria. A workplace population study which was a cross-sectional descriptive study of survey design was carried out in Akure the capital city of the State. The study population comprised of civil servants between the ages of 18-60 years in Ondo State. It was conducted among 500 consenting urban civil servants recruited randomly selected from 7 ministries, and agencies in Akure municipality. A close ended questionnaire containing 45 items was the tool for data collection and it was composed of 4 sections. Validity of the instrument was done by giving the draft of the questionnaire to experts in health education to vet. The reliability of the questionnaire was done with a coefficient of 0.72 which indicated that the instrument had good internal consistency and was adequate for the study. However, only 480 of the selected respondents returned usable questionnaire. Data were analysed using descriptive and inferential statistics. The findings of the study revealed that respondents had poor knowledge, average positive attitude and average good practices toward hypertension. It was recommended among others that measures should be taken by health providers to improve the knowledge and practice towards hypertension of this study population. Appropriate workplace interventions need to be developed and implemented to reduce the preventable burden of hypertension.

Keywords: Hypertension, Modifiable Risk Factors, Knowledge, Attitude, Practice,

IJARBAS

Accepted 30 September 2020

Published 30 September 2020

DOI: 10.5281/zenodo.4072044



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Introduction

The mortality and morbidity rate of hypertension is high and it sets a main public health problem globally, adding significantly to the world-wide disease, burden of heart disease, kidney failure, premature death, stroke, and disability, (Angaw, Dadi & Alene, 2015). Hypertension is often referred to as a silent killer as an outcome of its asymptomatic nature which makes the findings hard in several persons (American Heart Association, 2017). Certain physical qualities and choice of one's way of life can put a person at higher risk for high blood pressure. When left untreated, the harm that high blood pressure causes to the circulatory system is important contributing factor to heart attack, stroke and other health threats.

High blood pressure also referred to as hypertension is the pressure of blood in the arteries - the vessels that transmit blood from the heart to the brain and other parts of the body. An actual amount of pressure is required to acquire the blood round the body. The beat at which the heart pumps blood is based on the flow of blood. The burden of the heart does not remain at equal level at all times. It differs based on doings at a specific point in time. Hypertension happens as an outcome to lengthy duration of irregular pressure of the main arteries (Delacroix, Chokka, Worthley, 2018). Hypertension means that the blood pressure in a person is steadily greater than the recommended level. It is commonly defined in adults as systolic blood pressure higher than or equal to 140mmHg and/or diastolic blood pressure higher than or equal to 90mmHg.

The modifiable risk factors are behavioural risk factors that can be reduced or controlled by intervention, these includes physical inactivity or lack of exercise, smoking or tobacco use, alcohol consumption and unhealthy diet and feeding, poor rest or sleep, stress and lack of medical check-up (WHO, 2018). WHO (2018) gave tobacco use, physical inactivity, alcohol, and unhealthy diet as the four main behavioural factors related to hypertensions. Other factors that can result based on the modifiable risk factors are high cholesterol level, elevated glucose, overweight and obesity. The modifiable risk factors of hypertensions are known to increase the likelihood of high blood pressure and are related to lifestyle of individuals. The risk factors of tobacco use, harmful use of alcohol, insufficient physical activity, overweight/obesity, unhealthy diet, high cholesterol level and high blood sugar could lead to hypertension (Jaya, 2020).

Worldwide available population-based observational studies, offered a sweeping view of the worldwide pressure of hypertension as the heading preventable cause of death worldwide. The authors valued that in 2010, the global prevalence of hypertension was 1.39 billion people, representing 31% of all grown-ups. This represented a 5.2% rise in the worldwide prevalence between 2000 and 2010. (Mills, Kelly, Reed, Kearney, Bundy, Reynolds, 2016). It is assessed that hypertension affects about 1 billion people all over the biosphere and it is the key risk factor for many other cardiovascular diseases (Mills, et al., 2016).

Nigeria is not exempted from this rising threat. Hypertension is greatly prevalent in Nigeria as in other African countries and creates the key danger factor for stroke in the country. One in every 5 Nigerian grown-ups has high blood pressure, less than a third of those with high blood pressure are aware of the fact that they have hypertension and less than a third of those who are aware are undergoing any form of treatment and less than a third of those undergoing treatment are sufficiently controlled (Ekeh, Ogunniyi, Isamade & Ekrikpo 2015).

A significant population group such as, the public servants, whose type of job encourages sedentary behaviour joined with unwholesome dietary practices are at a larger risk of emerging obesity which is an important donor to the increasing burden of hypertension (Aladeniyi, Adeniyi, Fawole, Adeolu, Goon & Ajayi, 2017). In a study conducted by Aladeniyi, et al. in Ondo State among public civil servants, result displayed that there was a high prevalence of hypertension amid study members with great hypertension unawareness (72%), while only 28% were aware of their hypertension status.

A person's knowledge of blood pressure play important role in the skill to avert hypertension. Avoidance of hypertension is attainable if the knowledge of its modifiable risk factors is better and this could lead to avoidance of its complications. Epidemiological studies have shown that a stroke does not happen at random, there are modifiable risk factors which lead to stroke, therefore awareness and good

knowledge of these risk factors are very vital to its prevention.

The burden of hypertension is increasing and an important contributor to it is the increasing burden of obesity. Several persons have a chance of growing obesity, and some are mostly at a larger risk. A significant population group are the civil servants, whose nature of job promotes sedentary deeds joined with unwholesome dietary practices and subsequently, obesity (Aladeniyi et al. 2017). Civil servants establish a great percentage of a nation's workforce and they add significantly to the economic growth of a nation yet they are not secure of the scourge of hypertension. The attention of hypertension has always been on hospitalised patients, the supposition that asymptomatic persons are strong is doubtful. In the light of this, this study examined the attitude, knowledge, and practice towards modifiable risk factors for hypertension among apparently well persons working in Ondo State Civil Service Commission.

Evaluation of attitude, knowledge, and practices (KAP) is a vital element of hypertension control, but slight info is obtainable from developing countries particularly in Ondo State where hypertension has recently been known as a main public health problem. Since involvements in workplace locations are measured to be cost-effective in averting cardiovascular diseases having hypertension as its main danger factor. Hence, the study examined attitude, knowledge, and practice towards modifiable risk factors for hypertension amid apparently healthy persons working in Ondo State Civil Service Commission.

Based on the foregoing, this study investigated attitude, knowledge, and practices towards modifiable risk factors for hypertension among civil servants in Akure municipality, Ondo State, Nigeria. The study specifically examined:

- i. knowledge of modifiable risk factors for hypertension among civil servants in Akure Municipality;
- ii. attitude towards modifiable risk factors for hypertension among civil servants in Akure Municipality;
- iii. practice towards modifiable risk factors for hypertension among civil servants in Akure Municipality;
- iv. relationship between knowledge and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension;
- v. relationship between attitude and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension; and
- vi. relationship between practice and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.

Research Questions

The following research questions were raised for this study

1. What is the knowledge of modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?
2. What is the attitude towards modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?
3. What is the practice towards modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?

Research Hypotheses

The following research hypotheses were generated for this study

1. There is no significant relationship between knowledge and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.
2. There is no significant relationship between attitude and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.
3. There is no significant relationship between practice and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.

Methodology

A workplace population study which was a cross-sectional descriptive study of survey design was carried out in Akure the capital city of the State. The study population comprised of civil servants between the ages of 18-60 years in Ondo State. It was conducted among 500 consenting urban civil servants recruited randomly selected from 7 ministries, and agencies in Akure municipality with the official working hours between 8:00am to 4:00pm, to produce a representative sample of the workforce in the city. All pregnant civil servants during the period of study were excluded.

A close ended questionnaire containing 45 items was the tool for data collection and it was composed of 4 sections. The first section was designed to elicit data on the participants' demographic characteristics, the second was on knowledge on modifiable risk factors for hypertension, the third section on the attitude towards risk factors for hypertension which was measured with Likert-type scale of frequently, sometimes, rarely and never, while the fourth was on practice towards modifiable risk factors for hypertension. Validity of the instrument was done by giving the draft of the questionnaire to experts of health education to vet.

The reliability of the questionnaire was done with a coefficient of 0.72 which indicated that the instrument had good internal consistency and was adequate for the study. However, only 480 of the selected respondents returned usable questionnaire. Data were analysed using descriptive statistics of frequency count and percentages while inferential statistics of Chi-Square was used to test the formulated hypotheses at 0.05 level of significance. Chi-square was used to test for association between socio-demographic variables and Knowledge, Attitude and Practice of the respondents.

Results

Research Question 1: What is the knowledge of modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?

Table 1: Knowledge of modifiable risk factors for Hypertension

Knowledge	Frequency	Percentage (%)
Poor	354	73.8
Good	126	26.3

Findings from table 1 above shows that only (26.3%) of the study subjects had good knowledge towards modifiable risk factors for hypertension, while (73.8%) had poor knowledge. Figure i further revealed the knowledge towards modifiable risk factors for hypertension at a glance

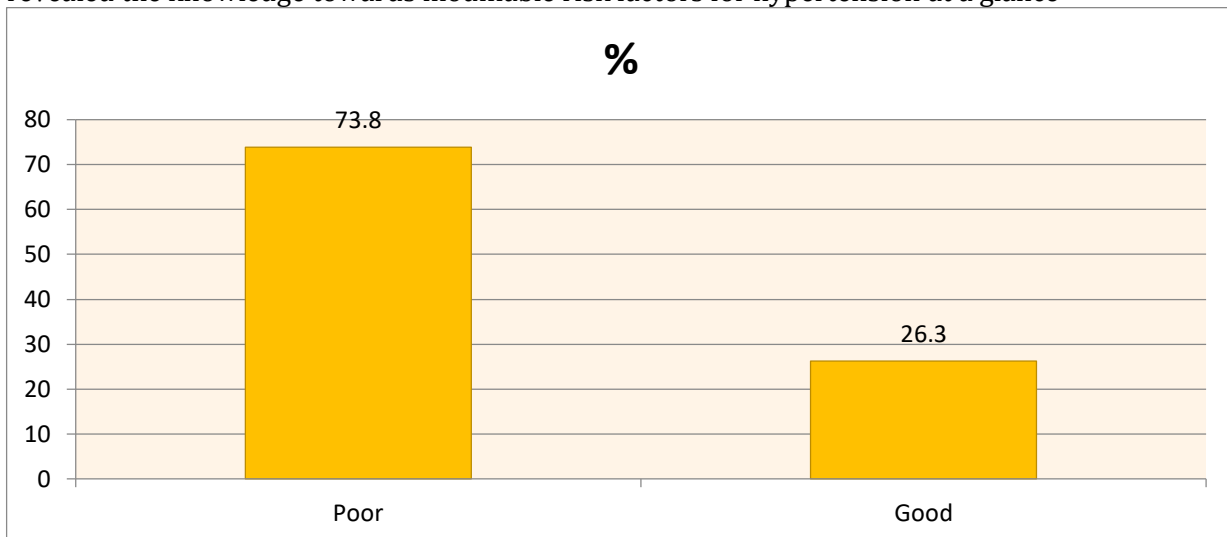


Figure i: Bar Chart showing knowledge towards modifiable risk factors for hypertension

Research Question 2: What is the attitude towards modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?

Table 2: Attitude towards modifiable risk factors for hypertension

Attitude	Frequency	Percentage (%)
Negative	297	38.1
Positive	183	61.9

The result from the table above shows that more than half of the respondents (61.9%) had positive attitude towards modifiable risk factors of hypertension. Figure ii further revealed the attitude towards risk factors for hypertension at a glance

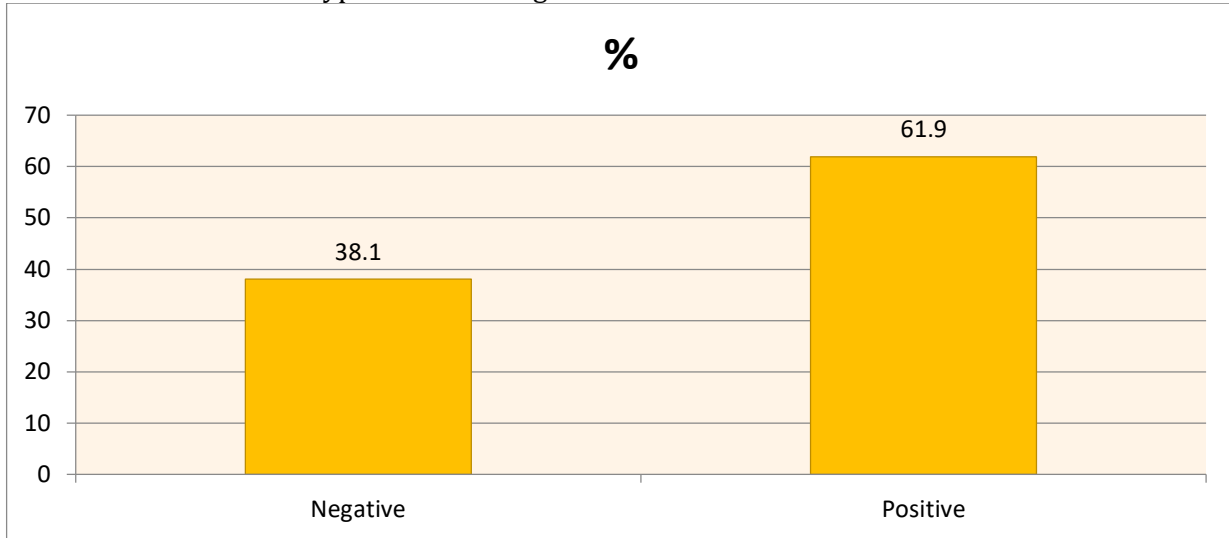


Figure ii: Bar Chart showing attitude relating to modifiable risk factors for hypertension

Research Question 3: What is the practice towards modifiable risk factors for hypertension among civil servants in Akure Municipality in Ondo State?

Table 3: Practice towards modifiable risk factors for hypertension

Practice	Frequency	Percentage (%)
Poor	227	47.3
Good	253	52.7

Findings from table 3 show that a little above half of the respondents (52.7%) had good practice towards modifiable risk factors for hypertension. Figure iii further revealed the practice towards modifiable risk factors for hypertension at a glance.

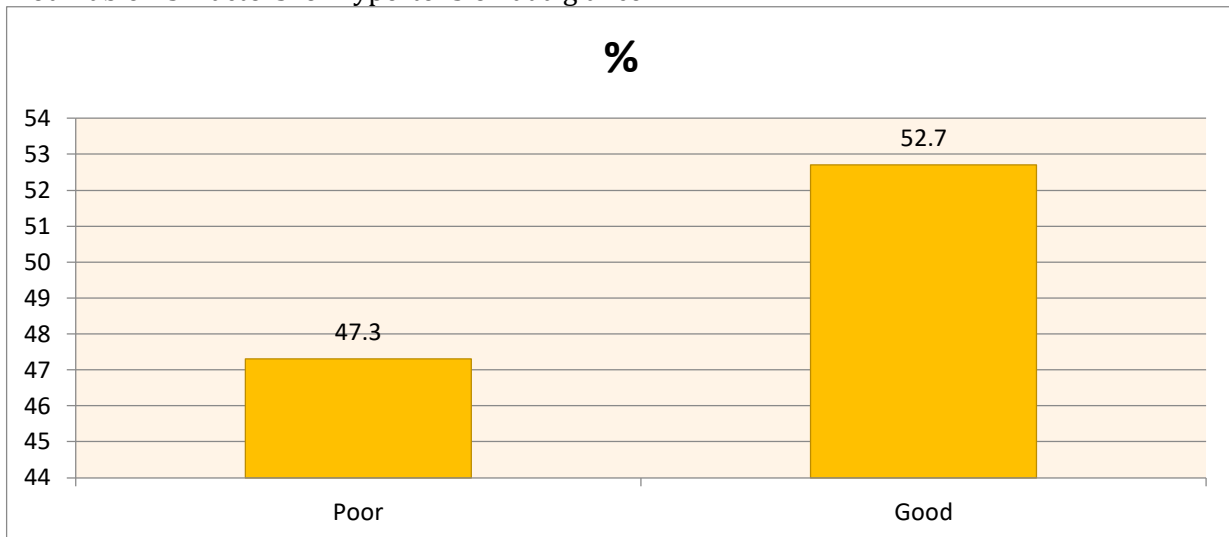


Figure iii: Bar Chart showing practice towards modifiable risk factors for hypertension

Test of Hypotheses



Hypothesis 1: There is no significant relationship between knowledge and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.

	KNOWLEDGE SCORE			Chi-Square	P-Value
	Good	Poor	Total		
	N (%)	N (%)	N (%)		
Age					
<30	39(43.3)	51(56.7)	90(100.0)	18.241	0.001*
30-39	41(25.6)	119(74.4)	160(100.0)		
≥40	46(20.0)	184(80.0)	230(100.0)		
Sex					
Male	19(14.4)	113(85.6)	132(100.0)	13.220	0.001*
Female	107(30.7)	241(69.3)	348(100.0)		
Religion					
Christianity	118(28.0)	304(72.0)	422(100.0)	5.388	0.068
Islam	8(14.0)	49(86.0)	57(100.0)		
Traditional	0(0.0)	1(100.0)	1(100.0)		
Education					
Primary	4(80.0)	1(20.0)	5(100.0)	9.056	0.029*
Secondary	15(32.6)	31(67.4)	46(100.0)		
Tertiary	91(25.4)	267(74.6)	358(100.0)		
Postgraduate	16(22.5)	55(77.5)	71(100.0)		
Marital status					
Never married	23(30.3)	53(69.7)	76(100.0)	6.710	0.152
Currently married	103(26.6)	284(73.4)	387(100.0)		
Widowed	0(0.0)	11(100.0)	11(100.0)		
Divorced	0(0.0)	1(100.0)	1(100.0)		
Separated	0(0.0)	5(100.0)	5(100.0)		
Grade level					
2-7	42(36.5)	73(63.5)	115(100.0)	11.298	0.004*
8-12	69(25.4)	203(74.6)	272(100.0)		
13-17	15(16.1)	78(83.9)	93(100.0)		

*P<0.05

Table 4 shows the association between knowledge about modifiable risk factors for hypertension and their Age, sex, religion, education, marital status, and grade level. Their knowledge is significant with their age, sex, education, and grade level because the p-value for each of the socio-demographic characteristics was less than 0.05 level of significance.

Hypothesis 2: There is no significant relationship between attitude and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.

	ATTITUDE SCORE			Chi-Square	P-Value
	Positive	Negative	Total		
	N (%)	N (%)	N (%)		
Age					
<30	36(40.0)	54(60.0)	90(100.0)	0.242	0.886
30-39	59(36.9)	101(63.1)	160(100.0)		
≥40	88(38.3)	142(61.7)	230(100.0)		

Sex					
Male	51(38.6)	81(61.4)	132(100.0)	0.020	0.887
Female	132(37.9)	216(62.1)	348(100.0)		
Religion					
Christianity	157(37.2)	265(62.8)	422(100.0)	2.123	0.346
Islam	26(45.6)	31(54.4)	57(100.0)		
Traditional	0(0.0)	1(100.0)	1(100.0)		
Education					
Primary	0(0.0)	5(100.0)	5(100.0)	4.633	0.201
Secondary	17(37.0)	29(63.0)	46(100.0)		
Tertiary	134(37.4)	224(62.6)	358(100.0)		
Postgraduate	32(45.1)	39(54.9)	71(100.0)		
Marital status					
Never married	31(40.8)	45(59.2)	76(100.0)	1.559	0.816
Currently married	147(38.0)	240(62.0)	387(100.0)		
Widowed	4(36.4)	7(63.6)	11(100.0)		
Divorced	0(0.0)	1(100.0)	1(100.0)		
Separated	1(20.0)	4(80.0)	5(100.0)		
Grade level					
2-7	40(34.5)	75(65.2)	115(100.0)	0.728	0.695
8-12	107(39.3)	165(60.7)	272(100.0)		
13-17	36(38.7)	57(61.3)	93(100.0)		
Knowledge					
Good	49(38.9)	77(61.1)	126(100.0)	0.042	0.837
Poor	134(37.9)	220(62.1)	354(100.0)		

*P<0.05

Table 5 shows the association between attitude towards modifiable risk factors for hypertension and their Age, sex, religion, education, marital status, grade level and knowledge. The result revealed that there was no significant relationship between attitude and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension because none of the p-values were less than 0.05 level of significance. Hence, the hypothesis is not rejected.

Hypothesis 3: There is no significant relationship between practice and socio-demographic characteristics of the respondents towards modifiable risk factors for hypertension.

	PRACTICE SCORE			Chi-Square	P-Value
	Good	Poor	Total		
	N (%)	N (%)	N (%)		
Age					
<30	43(47.8)	47(52.2)	90(100.0)	3.256	0.196
30-39	79(49.4)	81(50.6)	160(100.0)		
≥40	131(57.0)	99(43.0)	230(100.0)		
Sex					
Male	56(42.4)	76(57.6)	132(100.0)	7.725	0.005*
Female	197(56.6)	151(43.4)	348(100.0)		
Religion					
Christianity	234(55.5)	188(44.5)	422(100.0)	12.379	0.002*
Islam	18(31.6)	39(68.4)	57(100.0)		

Traditional Education	1(100.0)	0(000.0)	1(100.0)		
Primary	3(60.0)	2(40.0)	5(100.0)	0.896	0.826
Secondary	24(52.2)	22(47.8)	46(100.0)		
Tertiary	192(53.6)	166(46.4)	358(100.0)		
Postgraduate	34(47.9)	37(52.1)	71(100.0)		
Marital status					
Never married	30(39.5)	46(60.5)	76(100.0)	14.967	0.005*
Currently married	217(56.1)	170(43.9)	387(100.0)		
Widowed	2(18.2)	9(81.8)	11(100.0)		
Divorced	0(0.0)	1(100.0)	1(100.0)		
Separated	4(80.0)	1(20.0)	5(100.0)		
Grade level					
2-7	64(55.7)	51(44.3)	115(100.0)	0.567	0.753
8-12	140(51.5)	132(48.5)	272(100.0)		
13-17	49(52.7)	44(47.3)	93(100.0)		
Knowledge					
Good	63(50.0)	63(50.0)	126(100.0)	0.503	0.478
Poor	190(53.7)	164(46.3)	354(100.0)		
Attitude					
Positive	102(55.7)	81(44.3)	183(100.0)	1.089	0.297
Negative	151(50.8)	146(49.2)	297(100.0)		

*P<0.05

Table 6 shows the association between practice towards modifiable risk factors for hypertension and their Age, sex, religion, education, marital status, grade level, knowledge and attitude. Their practice is significant with their sex, religion, and marital status because the p-value for each of the socio-demographic characteristics was less than 0.05 level of significance.

Discussion

Findings from the study revealed that (26.3%) had good knowledge towards modifiable risk factors for hypertension. This is not in accordance with a study conducted in Nigeria by (Akinlua, Meakin, Umar & Freemantle, 2015) where about half of his respondents had good knowledge of hypertension. But consistent with findings from Aladeniyi, et. al. (2017) study among civil servants in Ondo State, where only 28% of those diagnosed of hypertension had good knowledge of hypertension. This study finding is much lower than the reported rate among university workers, 62.9%, (Vincent-Onabajo, Mohammad & Umeonwuka 2015). The wide disparity in the reports may be as a result of the quest for knowledge in the academic environment. This suggests that workplace screening should be mandatory and periodic practice among civil service workers in the state.

The findings of the study also revealed that more than half of the participants (61.9%) had average positive attitude towards modifiable risk factors of hypertension. This is consistent with findings from other hospital-based study in Enugu, Nigeria and Turkey where more than 50% of the participants adopted healthy lifestyle measures once they were aware of hypertension (Ekeh, et al., 2015). However, it is not consistent with finding of a similar study in sub – urban Nigerian community which revealed negative attitude and inadequate practice towards life style modification among hypertensive patients where up to 81.5% use much table salt, 21.3% eat vegetables regularly with only 9.3% engaging in exercise (Mill, et al., 2016). This may be due to differences in the study area, in which there is more enlightenment by health workers in hospital based urban study area. However, it was revealed from the findings that (52.7%) had average good practice towards modifiable risk factors for hypertension.

Conclusions

The researcher concluded that respondents had poor knowledge, average positive attitude and average good practices toward hypertension. Poor knowledge due to lack of quality information on hypertension may likely be responsible for the average life style modification they lived.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Measures should be taken by health providers to improve the knowledge and practice towards hypertension of this study population. Appropriate interventions need to be developed and implemented to reduce the preventable burden of hypertension
2. There is need to encourage health services including health education targeting various modifiable risk factors and promotion of good attitude and practices towards modifiable risk factors of hypertension.
3. There is a need to implement effective workplace health policy and regularly organise health education and screening for civil servants in the setting to reduce the burden of undiagnosed hypertension as a result of ignorance.
4. The health workers have to play part by educating the people and also themselves being an example in avoiding the modifiable risk factors for hypertension like consumption of fatty food, alcohol and smoking.

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Cite this article:

Author(s), OLORUNTOBA, JACINTA ASTOSIME, (2020). "Knowledge, Attitude and Practices Towards Modifiable Risk Factors for Hypertension Among Civil Servants in Akure Municipality, Ondo State, Nigeria". Name of the Journal: International Journal of Academic Research in Business, Arts and Science, (IJARBAS.COM), P, 32- 43. DOI: <http://doi.org/10.5281/zenodo.4072044> , Special Issue: 9, Vol.: 2, Article: 3, Month: September, Year: 2020. Retrieved from <https://www.ijarbas.com/all-issues/>

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Clients' Perception and Satisfaction with The Quality of Antiretroviral Therapy Services in Ekiti State, Nigeria

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Abstract

This study determined the clients' perception and satisfaction with the quality of antiretroviral therapy services in Ekiti State, Nigeria. A prospective cross-sectional study design was carried out to yield quantitative data on clients' perception and satisfaction with the quality of ART services in Ado-Ekiti Local Government Area. The study targeted PLWHA who assess health care in Ado-Ekiti local government area. The sample size for the study was 400 PLWHA. Primary Data were collected using pre-tested and semi-structured questionnaires. The research assistants such as Nurses were trained to administer the questionnaire to ensure accuracy of the data obtained. The data obtained were analysed descriptively through descriptive statistics. The findings of this study revealed that the majority of HIV/AIDS clients in Ado-Ekiti local government area have a good perception about the services they receive. Similarly, almost all of them are satisfied with the quality ART services. It was recommended among others that it is important to establish a system of regularly getting clients' feedback on different aspects of the services provided, in order to improve on them and serve clients better.

IJARBAS

Accepted 30 September 2020

Published 30 September 2020

DOI: 10.5281/zenodo.4072244

Keywords: Perception, Satisfaction, Antiretroviral Therapy Services,



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Introduction

The human immunodeficiency virus (HIV) and the resulting acquired immunodeficiency syndrome (AIDS) was first observed in the early 1980s. Some decades later, HIV infection was increasing more rapidly in developing countries, particularly in sub-saharan Africa. HIV/AIDS remains incurable and devastates many communities and nations. Since the first reported case in United States in 1981, it has spread to every country in the world. The ravages of the AIDS epidemic have made this disease the highest priority of our health system.

Nigeria has the second highest burden of HIV and AIDS in the world (UNAIDS, 2020). The general population survey in 2018 puts the country at an adult HIV prevalence of 1.9%. About 1.9 million people are estimated to be living with HIV/AIDS in Nigeria and the estimated number of new infections and HIV/AIDS related deaths was 130,000 and 53,000 respectively in 2018. Six states in Nigeria accounted for 41% of people living with HIV/AIDS (PLWHA) which include Oyo, Kano, Benue, Lagos, Kaduna and Akwa Ibom. The prevalence rate in rural areas is 4% while urban is 3%. Approximately 46,000 people died from HIV/AIDS related illness in 2019 in Nigeria. The prevalence of HIV in Ekiti State is 0.18% (UNAIDS, 2020).

Over the past decade, the rapid expansion of antiretroviral treatment in Africa and Asia has dramatically reduced HIV-related morbidity and mortality, and transformed HIV into a chronic illness (WHO, 2011). There are many antiretroviral treatment centres in hospitals across Nigeria that offers services ranging from diagnosis, staging, routine investigations treatment and routine follow-up. With all these, it still remains a challenge to achieve the universal access target of high quality of HIV/AIDS health care services and optimal patient satisfaction in many low-income countries with the hardest hit of HIV epidemics (Wolfe, Carrieri & Shepard, 2010). Patient satisfaction is defined as the patient's personal evaluation of providers' ability to successfully deliver care that meets patients' expectations and needs (Kagashe & Rwebangila, 2011)

Client satisfaction plays an important role in the assessment of health services quality used to establish institutional loyalty, usage patterns, word-of-mouth communications, and presumably to enhance the rate by which clients attain satisfactory levels of health. A number of factors influence patients' satisfaction with health care services including patients' socio demographic characteristics, physical health status, patients' personal understanding and expectations from various health care services that is, doctors, nurses, laboratory and pharmacy services (Kagashe & Rwebangila, 2011).

Hence, patient satisfaction with health care reflects the quality of services from the patients' perspective that supplements traditional indicators such as survival outcomes or processes of care (Crane, Lober, Webster, Harrington & Crane, 2007). In the same vein, the measurement of patient satisfaction could help health managers come up with measures to evaluate the performance of health care delivery system in addition to identifying patients in need of additional attentions or other interventions aimed at improving their health care (NACA, 2017).

Measuring patient satisfaction will enhance appropriate communication and building of stronger health worker-patient relationship based on identified gaps and barriers to effective performance of HIV/AIDS prevention and control programs from the patients' perspective. Although several studies have documented challenges with HIV/AIDS prevention and control programs in Nigeria (Olowookere, Fatiregun, Akinyemi, Bamgboye & Osagbemi, 2008), however what remains unknown is the magnitude and patterns of client satisfaction and perception with anti-retroviral therapy services in health centres in Ekiti State, Nigeria that have different socioeconomic and cultural beliefs from areas where studies have been reported.

The general objective was to determine the clients' perception and satisfaction with the quality of antiretroviral therapy services in Ekiti State, Nigeria. The study specifically:

- vii. assessed the clients' perception about the quality of services offered in Ado-Ekiti Local Government Area;
- viii. determined the clients' satisfaction with the quality services offered in Ado-Ekiti Local Government Area; and

ix. assessed the quality of ART Services in Ado-Ekiti Local Government Area.

Research Questions

The following research questions were raised for this study

1. What is the client's perception about the quality of services offered in Ado-Ekiti Local Government Area?
2. What is the client's level of satisfaction with the quality of services offered in Ado-Ekiti Local Government Area?
3. What is the quality of ART services in Ado-Ekiti Local Government Area?

Methodology

A prospective cross-sectional study design was carried out to yield quantitative data on clients' perception and satisfaction with the quality of ART services in Ado-Ekiti Local Government Area. The study targeted PLWHA who assess health care in Ado-Ekiti local government area. The sample size for the study was determined using the formula for calculating single proportion by Abrahamson and Gahlinger and after calculation, the sample size was 400 PLWHA.

There were 7 ART clinics in Ado-Ekiti Local government area (4 Governmental and 3 Non-governmental Clinics). Simple random sampling (balloting) method was used to select 2 out of each, making 4 ART centres. The number of clients that was chosen from each ART clinic was proportionate to the total population of clients in ART clinics. Simple random sampling method (balloting) was used to select an average number of clients that would be seen on each clinic day from each ART clinic entry point during the study period, and data was obtained from the existing records.

Primary Data were collected using pre-tested and semi-structured questionnaires. These were administered to the eligible clients at the clinic. They were objectively designed to answer questions on clients' views regarding their satisfaction and perception of ART services in Ado-Ekiti Local Government Area. It consisted of four sections to cover the scope of the study. They are: Socio demographic data, Client's perception with service provision, Client's satisfaction with the service provision, and Quality of ART services.

The research assistants such as Nurses were trained to administer the questionnaire to ensure accuracy of the data obtained. The data obtained were analysed using the Statistic Package for Social Sciences (SPSS) where the research questions were answered descriptively through descriptive statistics.

Results

Research Question 1: What is the client's perception about the quality of services offered in Ado-Ekiti Local Government Area?

Table 1: Client's Perception about the service provision

Variable	Very poor	Poor	Average	Good	Very Good
Efficiency of service	2 (0.6%)	0 (0.0%)	11 (3.2%)	115(33.3%)	217(62.9%)
Friendliness of staff	2 (0.6%)	0(0.0%)	14 (4.1%)	120 (34.8%)	209(60.6%)
Helpfulness of staff	2(0.6%)	0(0.0%)	16(4.6%)	135(39.1%)	192((55.7%)
Cleanliness					
Nursing Station	4(1.2%)	0(0.0%)	7(2.0%)	124(35.9%)	210(60.9)
Waiting Room	3(0.9%)	4(1.2%)	9((2.6%)	115(33.3%)	214(62.0%)
Consulting room	3(0.9%)	1(0.3%)	11(3.2%)	77(22.3%)	253(73.3%)

Pharmacy room	3(0.9%)	1(0.3%)	9(2.6%)	127(36.8%)	205(59.4%)
Rest room	4(1.2%)	1(0.3%)	7(2.0%)	157(45.5%)	176(51.0%)

Table 1 shows that two hundred and seventeen respondents rate the efficiency of services at very good representing 62.9% of the total respondents. One hundred and fifteen respondents rate it at good equivalent to 33.3% of the total respondents. Eleven respondents rate the efficiency of services at average representing 3.2% of the total respondents, while two respondents rate it at very poor. Two hundred and nine respondents rate the friendliness of staff at very good representing 60.6% of the total respondents. One hundred and twenty respondents rate it at good equivalent to 34.8% of the total respondents. Fourteen respondents rate the friendliness of staff at average equivalent to 4.1% of the total respondents. Two respondents rate it at poor. One hundred and ninety two respondents rate the helpfulness of staff at very good representing 55.7% of the total respondents. One hundred and thirty five respondents rate it at good equivalent to 39.1% of the total respondents. Sixteen respondents rate the helpfulness of staff at average representing 4.6% of the total respondents while two respondents rate it at very poor.

Two hundred and ten respondents rate the cleanliness of the nursing station at very good representing 60.9% of the total respondents. One hundred and twenty four respondents rate it at good equivalent to 35.9% of the total respondents. Seven respondents rate the cleanliness of the nursing station at average representing 2.0% of the total respondents while four respondents rate it at very poor. Two hundred and fourteen respondents rate the cleanliness of the waiting room at very good representing 62.0% of the total respondents. One hundred and fifteen respondents rate it at good equivalent to 33.3% of the total respondents. Nine respondents rate the cleanliness of the waiting room average representing 2.6% of the total respondents while four and three respondents rate it at poor and very poor respectively.

Two hundred and fifty three respondents rate the cleanliness of the consulting room at very good representing 73.3% of the total respondents. Seventy seven respondents rate it at good equivalent to 22.3% of the total respondents. Eleven respondents rate the cleanliness of the consulting room at average representing 3.2% of the total respondents while one and three respondents rate it at poor and very poor respectively. Two hundred and five respondents rate the cleanliness of the pharmacy room at very good representing 59.4% of the total respondents. One hundred and twenty seven respondents rate it at good equivalent to 36.8% of the total respondents. Nine respondents rate the cleanliness of the pharmacy at average representing 2.6% of the total respondents. One and three respondents rate it at poor and very poor respectively.

One hundred and seventy six respondents rate the cleanliness of the rest room at very good representing 51.0% of the total respondents. One hundred and fifty seven respondents rate it at good equivalent to 45.5% of the total respondents. Seven respondents rate the cleanliness of the rest room at average representing 2.0% of the total respondents while one and four respondents rate it at poor and very poor respectively.

Research Question 2: What is the client's level of satisfaction with the quality of services offered in Ado-Ekiti Local Government Area?

Table 2: Clients satisfaction with service provision

Variable	Strongly Disagree	Disagree	Unsure/ Indifferent	Agree	Strongly Agree
It takes more than 30 minutes to get to the hospital	13(3.8%)	55(15.9%)	74(21.4%)	163(47.2%)	40(11.6%)
It takes more than the stated	4(1.2%)	40(11.6%)	199(57.7%)	95(27.5%)	7(2.0%)

waiting period on the service carter to be served					
It costs more than 100 naira to get to the hospital	8(2.3%)	19(5.5%)	53(15.4%)	208(60.3%)	57(16.5%)
The clinic is in good condition	0(0.0%)	0(0.0%)	7(2.0%)	159(46.1%)	179(51.9%)
The clinic is clean	0(0.0%)	0(0.0%)	9(2.6%)	179(51.9%)	157(45.5%)
I find the support groups useful	2(0.6%)	0(0.0%)	291(84.3%)	30(8.7%)	22(6.4%)
The toilets are dirty	35(10.1%)	240(69.6%)	47(13.6%)	17(4.9%)	6(1.7%)
I had to wait a long to get my folder	14(4.1%)	130(37.7%)	150(43.5%)	43(12.5%)	8(2.3%)
I had to wait a long to get my medications	12(3.5%)	63(18.0%)	158(45.8%)	106(30.7%)	7(2.0%)
There was a bench for me to sit on while I waited	4(1.2%)	8(2.3%)	76(22.0%)	212(61.4%)	45(13.0%)
The person who gave me my folder was helpful	0(0.0%)	2(0.6%)	22(6.4%)	265(76.8%)	56(16.2%)
The nurse who attended to me listened to my problems	0(0.0%)	0(0.0%)	17(4.9%)	222(64.3%)	106(30.7%)
The doctor who treated me was polite	0(0.0%)	0(0.0%)	19(5.5%)	191(55.4%)	135(39.1%)
I was pleased with the way I was handled at the clinic	0(0.0%)	2(0.6%)	13(3.8%)	209(60.6%)	121(35.1%)
The doctor explained to me what was wrong with me	2(0.6%)	2(0.6%)	9(2.6%)	201(58.3%)	131(38.0%)
My privacy was respected by all staff	2(0.6%)	0(0.0%)	14(4.1%)	226(65.5%)	103(29.9%)
I did not have to wait for long before I got my medicine	36(10.4%)	110(31.9%)	106(30.7%)	71(20.6%)	22(6.4%)
The staff visit at home to check on my improvement	280(81.2%)	39(11.3%)	14(4.1%)	7(2.0%)	5(1.4%)

Table 2 above shows that forty respondents strongly agree that it takes more than 30 minutes to get to the hospital representing 11.6% of the total respondents, meanwhile one hundred and sixty three respondents agree that it takes more than 30 minutes to get to the hospital. Seventy respondents are indifferent about it equivalent to 21.4% of the total respondents. Fifty five and thirteen respondents disagree and strongly disagree respectively. Fifty seven respondents strongly agree that it costs more than 100 naira to get to the hospital representing 16.5% of the total respondents. Two hundred and eight respondents agree to it equivalent to 60.3% of the total respondents. Fifty three respondents are indifferent about the cost of transportation representing 15.4% of the total respondents. Nineteen and eight respondents disagree and strongly disagree respectively.

Fifty two percent of the respondents strongly agree that the clinic is in good condition, 46% of the total respondents also agree whereas 2% of them are unsure while 45% of the respondents strongly agree that the clinic is clean. Fifty two percent of the total respondents also agree whereas 3% of them are unsure, 84% of the total respondents are unsure whether they find the support group useful. Though 9% and 6% of the respondents agree and strongly agree respectively. However 1% of the total respondents strongly disagree. Thirty five respondents strongly disagree that the toilets are dirty representing 10.1% of the total respondents. Two hundred and forty respondents also disagree, representing 69.6% of the total respondents. Forty seven respondents are indifferent about it.

Seventeen and six respondents however agree and strongly agree respectively that the toilets are dirty. Fourteen respondents strongly disagree that they wait for a long time before their folders are retrieved representing 4.1% of the total respondents. One hundred and thirty respondents also disagree that they wait for a long time before their folders are retrieved equivalent to 37.7% of the total respondents. One hundred and fifty respondents are indifferent about this, representing 43.5% of the total respondents. Forty three and eight respondents however agree and strongly agree respectively that they wait for a long time before their folders are retrieved. Twelve respondents strongly disagree that they wait for a long time to get their medications representing 3.5% of the total respondents. Sixty two respondents also disagree that they wait for a long time before their medications are dispensed equivalent to 18.0% of the total respondents. One hundred and fifty eight respondents are indifferent about it equivalent to 45.8% of the total respondents. One hundred and six, and seven respondents agree and strongly agree respectively that they wait for a long time before their medications are dispensed.

Two hundred and twelve respondents agree that there are benches for them to seat on while they wait representing 61.4% of the total respondents. Forty five respondents also strongly agree with this equivalent to 13.0% of the total respondents. Seventy six respondents are indifferent about it representing 22.0% of the total respondents. Eight and four respondents however disagree and strongly disagree respectively that there are benches for them to seat. 77% of the total respondents agree that the person who gives them their folders is helpful. 16.0% of them also strongly agree that the person is helpful. 6.0% of the total respondents are unsure while 1.0% of the respondents disagree. 64.0% of the respondents agree that the nurses who attend to them listen to their problems. 31.0% of them also strongly agree to that. Only 5.0% of the respondents are unsure that the nurses listen to their problems. 55.0% of the total respondents agreed that the doctors who treated them were polite. 39.0% of them also strongly agreed that the doctors were polite. 6.0% of the respondents were unsure.

One hundred and twenty one respondents strongly agreed that they are pleased with the way they are handled at the clinic representing 35.1% of the total respondents. Two hundred and nine respondents also agreed that they are pleased, equivalent to 60.6% of the total respondents. Thirteen respondents were indifferent about it representing 3.8% of the total respondents. Two respondents however disagree. One hundred and thirty one respondents strongly agreed that the doctor explained what was wrong with them representing 38.0% of the total respondents. Two hundred and one respondents also agreed that the doctor explained what was wrong with them equivalent to 58.3% of the total respondents. Nine respondents were indifferent while two and two respondents disagreed and strongly disagreed respectively.

Sixty-five percent of the total respondents agreed that their privacy is respected by all staff. 30.0% of the total respondents also strongly agreed that their privacy is respected by all. 4.0% of respondents are unsure, while 1.0% of them strongly disagreed. One hundred and ten respondents agreed that they wait for long before they got their medicine representing 31.9% of the total respondents. Thirty six respondents also strongly agreed that they wait for long before they got their medicine equivalent to 10.4% of the total respondents. One hundred and six respondents were unsure about this. Seventy one and twenty two respondents disagreed and strongly disagreed that they wait for long before they got their medicine. Two hundred and eighty respondents strongly disagree that the staff visit the clients at home to check on their improvements representing 81.2% of the total respondents. Thirty nine respondents disagree that the staff visit the clients at home equivalent to 11.3% of the total respondents. Fourteen

respondents are indifferent, while seven and five respondents agree and strongly agree respectively that the staff visit them at home.

Research Question 3: What is the quality of ART services in Ado-Ekiti Local Government Area?

Table 3: Quality of ART Services

Variable	Strongly Disagree	Disagree	Unsure/ Indifferent	Agree	Strongly Agree
My physical mental state improved after the visit of the doctor	4(1.2%)	0(0.0%)	5(1.4%)	166(48.1%)	170(49.3%)
I feel calm after the consultation	2(0.6%)	0(0.0%)	2(0.6%)	183(53.0%)	158(45.8%)
The doctor empathized with my situation	0(0.0%)	4(1.2%)	9(2.6%)	188(48.7%)	162(47.0%)
The doctor listened to me willingly and until the end	0(0.0%)	4(1.2%)	4(1.2%)	150(43.5%)	187(54.2%)
I know what how to prevent likely complications	0(0.0%)	2(0.6%)	23(6.7%)	140(40.6%)	178(51.6%)
I can always count on a solution if there are complications	0(0.0%)	0(0.0%)	10(2.9%)	165(47.8)	170(49.3)
A visit to the doctor usually results in an improvement in health	0(0.0%)	0(0.0%)	2(0.6%)	140(40.6%)	203(58.8%)
My doctor not only treats, but also gives advice on a healthy lifestyle	0(0.0%)	2(0.6%)	0(0.0%)	143(41.4%)	200(58.0%)

Table 3 depicts 49.0% of the total respondents strongly agree that their physical and mental state improved after a visit to the doctor. 48.0% of them also agree that their physical and mental state improved after a visit to the doctor. 2.0% of the respondents are unsure while the remaining 1.0% of the total respondents strongly disagree. One hundred and sixty two respondents strongly agree that the doctor empathizes with their situation representing 47.0% of the total respondents. One hundred and sixty eight respondents also agree that the doctor empathizes with their situation representing 48.7% of the total respondents. Nine respondents are indifferent equivalent to 2.6%. Four respondents disagree that the doctor empathizes with their situation equivalent to 1.2% of the total respondents.

Fifty-four percent of the total respondents strongly agree that the doctor listened to them willingly and until the end while 44.0% of the respondents also agree that the doctor listened to them. One percent of the respondents are unsure while another 1.0% of the respondents disagree, 49.0% of the total respondents strongly agree that they can always count on a solution if there are complications. Forty-eight percent of them also agree that they can always count on a solution if there are complications while 3.0% of the total respondents are unsure. 58.8% of the total respondents strongly agree that a visit to the doctor usually result to an improvement in health. 40.6% of the total respondents also agree that a visit to the doctor usually result to an improvement in health. 0.6% of the respondents are unsure. Fifty-eight percent of the total respondents strongly agree that the doctor does not only treat but gives advice on health lifestyle. 41.0% of the total respondents also agree that the doctor does not only treat but gives advice on healthy lifestyle. 1.0% of them however disagree.

Discussion

The findings of the study revealed that virtually all the respondents could vouch for the efficiency of the antiretroviral therapy services received. These services include: counselling and testing for HIV/AIDS, health education tailored towards prevention of new infections and healthy lifestyle, medical care of the clients, prevention of mother to child transmission, pharmacy services and client support at the hospital. Virtually all the respondents also found

the staff in the ART clinics to be friendly and helpful to them. Doctors and nurses that attend to the HIV/AIDS patients are specially trained in the art of friendliness so that there should not be any form of stigmatization in the clinics.

The level of satisfaction and perception of clients regarding ART services was rated on Likert scale of very poor – very good from the matrix questions raised pertaining to the quality of services. Majority of the respondents (92.8%) are satisfied with the quality of ART services they received. In fact, 96.8% of them have a good perception about the services rendered to them. A similar trend was observed in a study done in South Africa that found high levels of patient satisfaction with ART-related services in the public sector (Wouters, Heunis, Rensburg & Meulemans, 2008). This is inconsistent with results of a study done in Ethiopia, evaluating the quality of HIV/AIDS clinical care in a referral hospital. Although 78% of patients expressed satisfaction, the other 22% did not (Alemayehu, Bushen & Muluneh, 2009). This difference may be because clients in South Africa were satisfied with things like cleanliness of the facilities, yet in the current study, appearance of physical facilities scored very low.

Conclusions

Clients' perception and satisfaction is one of the imperative crucial components for success in healthcare service delivery. Principally, it is extremely more important and significant key issue in the ART units because of their vital role in the lives of hundreds of thousands of HIV/AIDS clients. The majority of HIV/AIDS clients in Ado-Ekiti local government area have a good perception about the services they receive. Similarly, almost all of them are satisfied with the quality ART services.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. It is important to establish a system of regularly getting clients' feedback on different aspects of the services provided, in order to improve on them and serve clients better.
2. The ART clinics should be supported to ensure a more constant and reliable drug supply for PLWHAS.
3. Close supervision of drug management is also necessary and staff can be trained in better drug management. All this will help to avoid the rise of ART-resistant viruses and reduce morbidity and mortality.

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Cite this article:

Author(s), DR. OGUNLEYE, Taiwo Samuel (MBBS, PGNP, MPH, MWACP), DR. SABAGEH, Adedayo Olukemi (MBBS, MPH, FWACP) , (2020). "Clients' Perception and Satisfaction with The Quality of Antiretroviral Therapy Services in Ekiti State, Nigeria". Name of the Journal: International Journal of Academic Research in Business, Arts and Science, (IJARBAS.COM), P, 44- 54. DOI: <http://doi.org/10.5281/zenodo.4072244> , Special Issue: 9, Vol.: 2, Article: 4, Month: September, Year: 2020. Retrieved from <https://www.ijarbas.com/all-issues/>

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Effects of Labless Kits On Senior Secondary School Students' Academic Performance in Physics in Osun State

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Abstract

This study examined the effects of Labless kits on senior secondary school students' academic performance in Physics in Osun state. Specifically, the research determined which of Labless kits and conventional laboratory would provide better academic performance in Physics. The study adopted the quasi- experimental pre-test, post-test control group design. The sample consisted of 206 students drawn from six public secondary schools in Osun State. The selection of the sample was done using multistage sampling technique. Two Senatorial districts were randomly selected from the three senatorial districts in Osun. Three Local Governments were randomly selected from each of the two senatorial districts earlier selected, making a total of six Local governments selected. One public secondary school was randomly selected from each of the six local governments chosen for the study. An intact class from each of the six selected schools was used for the study. Purposive sampling technique was used to assign the schools into labless kits and laboratory groups respectively. Physics Achievement Test (PAT) was developed, validated and used to generate the data for the study. The research question raised was answered descriptively while the three hypotheses generated were tested using t- test and Analysis of Covariance (ANCOVA). The result of the study showed that the use of labless kits produced better students' academic performance in Physics than using conventional laboratory. The use of labless kits helped the students to achieve maximally in Physics during teaching as this was revealed in their performance. Based on the findings, the use of Labless kits should be encouraged in the teaching of Physics in secondary schools. Physics teachers should be given adequate orientation through workshops and seminars to update their knowledge in the use of Labless kits strategy in teaching.

IJARBAS

Accepted 30 September 2020

Published 30 September 2020

DOI: 10.5281/zenodo.4104630



Keywords: Labless kits, practical skill, academic performance,

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Introduction

Physics as a science subject is the study of physical properties of matter and its interaction with energy. It is characteristically an experimental subject; concepts; and principles generated from Physics are very useful in understanding of natural phenomena in sciences. This implies that effective practical activities in Physics are significant because they allow learners to form a bridge between what they hear, see, handle (hands-on) and scientific ideas that account for their observations (brains-on). Physics is one of the science subjects studied at the senior secondary education level as it lays foundation for further study in Physics related course at higher levels such as medicine, nursing, pharmacy, food technology and others. Physics is a subject that requires a lot of practical work using physics laboratory equipment.

Despite the importance of this subject, it seems that the teaching and learning of Physics has been fraught with challenges such as low academic performance in secondary schools. Remarkable among the causes for students' low academic performance in Physics in school include: poorly equipped Physics laboratories, poor Science and Mathematics background of students at the junior secondary level of education, inadequate motivation of teachers, inappropriate teaching strategies employed by the teachers, poor remuneration and insufficient number of qualified Physics teachers (NERDC, 2009; Jegede & Adedayo, 2013). These factors have similarly added to deterioration in performance of students' performance in Physics at the Senior Secondary School Certificate Examinations (SSCE).

The underachievement in science; particularly in Physics is worrying to the educationists, governments and science educators, because of the fact that it is at the secondary education level that a sound foundation for further study in science and science related disciplines is laid. All-encompassing Physics education therefore is unavoidable in order to produce the desired scientists needed for the scientific advancement of this country. Physics is a practical oriented subject that requires a lot of practical work using physics laboratory equipment. Physics laboratory equipment must not only be adequately provided in schools but must be optimally utilized for its effective teaching (by teachers) and meaningful learning (by students) (Lawal, 2006).

There are many teaching strategies that could be used in familiarizing the students with practical works so as to improve their academic performance but the two strategies this research is interested in are labless kits and conventional laboratory. Researchers through the advancement in technology were able to make use of an innovative labless kits or ready-to-use kits as alternative to the conventional laboratory. The labless kits (microscience kits) practical apparatuses were produced and comprised pre-selected collection of scientific apparatus designed to illustrate particular scientific principles, usually linked to curriculum material. They are also affordable and far cheaper than conventional laboratory apparatuses and materials, (UNESCO, 2013).

The first large scale labless kits were produced in 1992 by the Research and Development in Mathematics, Science and Technology Education (RADMASTE) Centre at the University of the Witwatersrand in Johannesburg (South Africa). They are small, virtually unbreakable and inexpensive, and have been designed to enhance the quality, relevance and accessibility of science and technology education, and also to involve the learner in applying scientific knowledge to real life situation (Rachmanwati, 2013). These labless kits have been produced and introduced on a large scale to more than 80 countries including Nigeria, South Africa, Cameroon, Kenya, Ethiopia, Sudan, Tanzania, Gambia among others. This was achieved by introductory workshops for local educators and initiation of pilot projects. The general overall objectives of this project are to:

1. promote practical science experimentation using labless kits as an advocacy tools amongst policy makers
2. improve science curricula by inclusion of hands-on experimentation for a better understanding of science
3. increase the interest of young people in science so as to promote gender equality, scientific literacy and choice of a scientific career, (UNESCO, 2013).

Ready-to-use kits, also known as Labless Kits are to provide science teachers with an empowering tool to help them increase learners' motivation, curiosity, interest, thinking skills and understanding.

The Labless Kits were designed to enable experiments to be performed without the need for laboratory facilities, electricity or running water and demonstrations can be performed anywhere, even outdoors. According to Science Demo Limited. The characteristics of Ready-to-use experiments or labless lab include:

3. creation of an exciting phenomenon within minutes, leading to an inquiry guidelines and background information, (including questions and answers for teachers) and video manuals
4. most kits are re-usable
5. refills are available
6. kits are easy to use and safe
7. kits are modular and can fit all science curricula
8. kits can be used anywhere
9. No running water or electricity is needed.

Therefore, the focus of this study is to consider the effects of Labless kits on senior secondary school students' academic performance in Physics in Osun state.

Purpose of the Study

The purpose of the study was to examine the effects of labless kits on senior secondary school students' academic performance in Physics in Osun state. Specifically, the research find out which of labless kits and conventional laboratory will provide better achievement of students in Physics.

Researcher Question

1. What are the effects of labless kits on the achievement of students in Physics?

Research Hypotheses

The following null hypotheses were generated for this study.

1. There is no significant difference between the pre-test mean score of students exposed to Labless kits and those taught with conventional laboratory.
2. There is no significant difference between the pre-test and post-test mean score of students exposed to Labless kits and those taught with conventional laboratory.
3. There is no significant difference between the post-test mean score of students exposed to Labless kits and those exposed to conventional laboratory.

Methodology

This study adopted the quasi-experimental pre-test and post-test design (one experimental group and control group).

The paradigm for the design is as shown below.

O₁ X O₂: Experimental group
O₃ C O₄: Control group

Where:

O₁, O₃= Pre-test

O₂, O₄= Post-test

X – Treatment via Labless Kits

C – Treatment via Conventional laboratory

The independent variables were the use of Labless kits and conventional laboratory. The dependent variable was the academic performance. The targeted population for the study was the 57,109 Senior Secondary Schools (S.S.S.) two students in public secondary schools in Osun State. The sample consisted of 206 students drawn from six public secondary schools in Osun State. The sample was selected using multistage sampling procedure.

Physics Achievement Test (PAT) was used to collect relevant data for this study. PAT was self-designed by the researcher. It consisted of two sections; A and B, section A consisted of bio-data of the respondents which include the name of the school, and sex. Section B comprised of 30 objectives items with four options. The items covered all the topics taught for six weeks. The instrument was used as both pre-test and post-test. The content of PAT used for pre-test was reshuffled for the post-test in order

to prevent practice effect.

The Physics Achievement Test (PAT) was given to experienced senior secondary school Physics teachers and Tests and Measurement experts. The face and content validity were ensured by assessing the wordings and ambiguity of the test items as well as their coverage. The final draft of the instrument was done based on the corrections and suggestions made by the experts. The reliability of PAT was carried out by administering the instrument on 25 participants in one of the school outside the sampled area using test-retest method. They were of comparable age with the participants in this study. After a period of two weeks, the instrument was re-administered on the same participants. The data collected were collated and analyzed using the Pearson Product Moment Correlation Analysis, which yielded reliability co-efficient of 0.89. This value was considered high enough to make the instrument reliable for use in this study.

Before carrying out the research in the schools, the researcher obtained permission from the authorities of the six schools to carry out the experiment in the schools. Afterwards, a day workshop was organized for the research assistants on the respective methods used in teaching their students from the selected schools. The treatment was carried out in three stages:

Stage I: Pre Treatment Stage: The researcher carried out the pre-test before introducing the treatment for each group. The answer sheets were collected and graded with the marking guide. The performance of the students was recorded for analysis.

Stage II: Treatment Stage:

- a) **Experimental Group (Lables Kits):** Lables Kits were used for teaching of the five topics in Physics namely: The Bernoulli effect – Pressure in an air stream, visualizing the concept of pressure, floating bodies in liquids of different densities, attractive force between particles in solid, and the effect of heat on a bi – metallic strip. Students were exposed to eighty minutes of experimental work and discussion for six consecutive weeks by the research assistants.
- b) **Control Group:** The control group has no special treatment, they were taught with the Conventional laboratory within the period of six weeks by research assistants.

Stage III: Post Treatment Stage: Post-test was carried out immediately after the treatment to each group with the same time duration as observed during the pre- test. The same Physics Achievement Test questions used during the pre-test was re-arranged to avoid practice effect and administered to the experimental group and control group.

The question raised was answered using descriptive statistics such as frequency count, mean, standard deviation and bar-chart. All the hypotheses generated for the study were analyzed using inferential statistics of t-test and analysis of co-variance (ANCOVA). All the hypotheses were tested at 0.05 level of significance.

Results

The research question raised was subjected to descriptive analysis using mean scores.

Question 1: What are the effects of lables kits on the achievement of students in Physics?

The pre-test and post-test scores of students in the two groups were used to answer this question.

Table 1: Mean scores of students exposed to lables kits and conventional laboratory

Groups	Test	N	Mean	S.D	Mean Diff.
Lables Kits	Pre Test	97	8.71	0.71	15.57
	Post Test		24.28	0.92	
Conventional Laboratory	Pre Test	109	8.59	0.81	6.96
	Post Test		15.55	0.97	
Total		206			

Table 1 shows that the mean difference in students' performance in Physics between pre-test and post-test scores for lables kits is 15.57, and conventional laboratory is 6.96. It

appears that the use of labless kits and conventional laboratory influences students' performance in Physics with the use of labless kits being the more effective in the teaching of Physics. Figure 1 further shows the pre-test and post-test scores of students in the two groups.

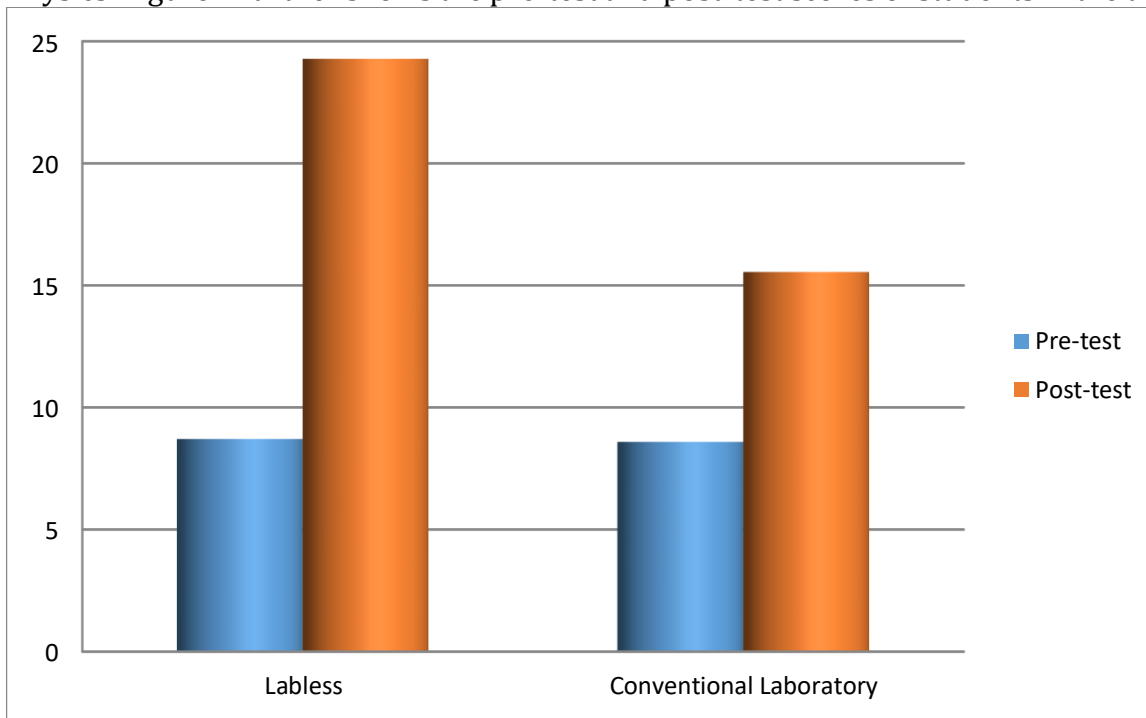


Figure 1: Pre-test and post-test scores of students exposed to labless kits and conventional laboratory

Figure 1 shows that the difference in students' performance between pre-test and post-test scores for Labless is more than Conventional laboratory. The obvious differences show that the use of Labless kits is more effective than conventional laboratory.

Hypotheses Testing

Hypothesis 1: There is no significant difference in the pre-test mean scores of students exposed to labless kits and those taught with conventional laboratory.

Table 2: t-test analysis for Pre – test Mean Scores of Students in Experimental and Control Groups

Variations	N	Mean	SD	df	t _{cal}	P (Sig)	Remark
Labless Kits	97	8.71	0.71	204	1.17	0.244	Not Significant
Conventional	109	8.59	0.81				

$P > 0.05$

Table 2 shows that the t-cal value of 1.17 is not significant because the P value (0.244) > 0.05 level of significance, this implies that null hypothesis is not rejected. Hence, there is no significant difference in the pre-test mean score of students exposed to labless kits and conventional laboratory. This implies that the two groups were homogenous at the commencement of this study

Hypothesis 2: There is no significant difference in the pre-test and post-test mean score of students exposed to Labless kits and those taught with conventional laboratory.

Table 3: Analysis of Covariance (ANCOVA) for Pre – test and Post – test Mean Scores of Students under the Groups

Sources	Sum of Square	df	Mean Square	F	Sig.
Corrected Model	3909.864 ^a	2	1954.932	2176.320*	.000
Covariate	606.368	1	606.368	675.037*	.000
Groups	3880.451	1	3880.451	4319.897*	.000
Error	182.350	203	.898		
Total	83716.000	206			
Corrected Total	4092.214	205			

R Squared = .955 (Adjusted R Squared = .955) * P < 0.05

Table 3 shows that there is a significant difference in the pre – test and post – test mean scores of students in the groups (Labless kits and conventional laboratory) as $P(.000) < 0.05$ and F-calculated (1, 204) = 4319.897 is greater than F-table (3.00) at 0.05 level of significance. This result led to the rejection of the hypothesis. Hence, there is significant difference in the pre-test and post-test mean score of students exposed to Labless kits and conventional laboratory. The use of Labless kits and conventional laboratory are effective and influences students' performance in Physics.

Hypothesis 3: There is no significant difference in the post-test mean scores of students exposed to Labless kits and conventional laboratory.

Table 4: t-test analysis for Post – test Mean Scores of Students in Experimental and Control Groups

Variations	N	Mean	SD	df	t _{cal}	P (Sig)	Remark
Labless	97	24.28	0.92	204	66.12*	0.00	Significant
Conventional	109	15.55	0.97				

*P<0.05

Table 4 shows that the t-cal value of 66.12 is significant because the P value (0.00) < 0.05 level of significance, this implies that null hypothesis is rejected. Hence, there is significant difference in the post-test mean scores of students exposed to Labless and conventional laboratory. The mean scores show a large difference in favour of Labless kits.

Discussion

The findings of the study revealed that the use of Labless kits and conventional laboratory both influence students' performance in Physics but using Labless kits produced a better effect. This finding agrees with that of Awotua, Williams and Aderonmu (2015) that the use of Labless kits would lead to good performance in Physics. The importance of Labless kits is especially apparent in developing the skills, interest and attitudes of the students in an interaction with the materials and the teacher. It is obvious from the findings that Labless kits is fundamental to a good performance in Physics. This is so because the equipment enables the students to grow independently without restrictions to rigid procedures in textbook and syllabuses.

Furthermore, results showed significant difference in the pre-test and post-test scores of students in Physics among the groups especially those exposed to Labless kits. This result agrees with the submission of Ogunleye and Adepeju (2011), Lasisi (2008) and Asiyai (2012) and Moeller, Theiler & Wu (2012) that exposing students to Labless kits will lead to a better performance in Physics. The probable reason for the large difference might be due to the fact that Labless kits are student centred which allow students to interact with each other, the materials and the teacher as well as to enquire, search, compare and generalize without undue intrusion or direction from the teacher who only fosters learning.

Findings of the study also revealed that a significant difference exists in the post – test mean scores of students exposed to Labless kits and conventional laboratory, with students

exposed to Labless kits performing better than those exposed to the conventional laboratory. This agreed with the submission of Seweje (2010) that good teaching strategies have the potent of improving cognition of students. This also justifies the earlier postulate of this study that Labless kits could facilitate meaningful learning of Physics.

Conclusion and Recommendations

Based on the findings of this study, it could be concluded that the use of labless kits produced better students' academic performance in Physics than using conventional laboratory. The use of labless kits helped the students to achieve maximally in Physics during teaching as this was revealed in their performance. It is therefore recommended that the use of Labless kits should be encouraged in the teaching of Physics in secondary schools. Also, Physics teachers should be given adequate orientation through workshops and seminars to update their knowledge in the use of Labless kits in teaching.

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Cite this article:

Author(s), TAYE Mufutaudeen, Prof OWOLABI, Olabode Thomas (Ph.D) , (2020). "Effects of Labless Kits On Senior Secondary School Students' Academic Performance in Physics in Osun State".

Name of the Journal: International Journal of Academic Research in Business, Arts and Science, (IJARBAS.COM), P, 55- 63. DOI: <http://doi.org/10.5281/zenodo.4104630> , Special Issue: 9, Vol.: 2, Article: 5, Month: September, Year: 2020. Retrieved from <https://www.ijarbas.com/all-issues/>

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International Journal of Academic Research in Business, Arts and Science (IJARBAS)

ISSN: 2664-7354 (Online), 2708-2687 (Print)



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Special issue



Issue: 9
Volume: 2
September: 2020

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IJARBAS SPECIAL ISSUE
SEPTEMBER 2020

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