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# Internet Access and Use of Social Media among Adolescents in Selected Secondary Schools in Ile-Ife, Nigeria

**Peter O. Adedeji[1], Priscilla Ibubelem Godwin-Ewu[2], Omolola O. Irinoye*[3], Godwin A. Ewu[4]**

*[1]Department of Nursing Science, Bowen University, Iwo, Osun State.*

*[2]Department of Nursing, University of Abuja Teaching Hospital, Gwagwalada, FCT.*

*[3]Department of Nursing Science, Obafemi Awolowo University, Ile-Ife.*

*[4]Department of Community Medicine, University of Abuja Teaching Hospital, Gwagwalada, FCT.*

## Abstract

**Background**: Despite increasing majority of adolescents having access to Internet every day, there is need to understand why a significant minority still lack access to Internet and social media, which is a form of digital inequality in the 21st Century.

**Aim:** To assess the rate of Internet access and use of social media among secondary school adolescents in Nigeria with comparative emphasis on socio-demographic variables among students in public and private schools.

**Methods**: A descriptive, cross-sectional study was conducted in four (2 public and 2 private) secondary schools in Ile-Ife, Osun State. A stratified sample of 596 Senior Secondary School (SSS) students (291 public, 305 private) were randomly selected across class levels from SSS 1 to SSS 3. Data collected were analyzed with SPSS version 26; using descriptive (frequency, percentage, mean and standard deviation) and inferential statistics (Chi square).

**Results**: Almost all private secondary school students (97.7%) had access to Internet, compared to 82.3% of students in public schools. Majority of the students that have access to the Internet were between the age 14 to 16years (75%), females (73.7%), and of Yoruba tribe (90.2%). Likewise, 63.5% of students in private and 41.2% of those in public schools have used social media. Nonetheless, 17.7% vs. 2.3% of the respondents in public and private schools have never browsed the Internet respectively. Six socio-demographic variables (gender, religion, school type, class level, residence after school and weekly pocket money) statistically influenced access to social media significantly ($p<0.05$). Although 52.1% of the overall student sample that had access to Internet, regularly use social media; there was no significant association between the level of Internet access and use of social media ($p = 0.280$).

**Conclusion**: Adolescents in private schools have higher Internet access and use of social media than those in public schools. Since more than one-third of adolescent students in secondary schools do not use social media as desired, due to some significant socio-demographic limitations; the adoption of a hybrid approach of online and offline channels of health communication and education is best recommended among school adolescent population in Nigeria.

**Keywords:** Internet Access; Use; Adolescents; Secondary School; Social Media; Digital Inequality; Health Communication; Health Education.

*[3] Omolola O. Irinoye (RN, Ph.D.) Department of Nursing Science, Obafemi Awolowo University, Ile-Ife ; Email: omololaoni@gmail.com.

## 1. Introduction

Adolescents and young people are now the most connected of all age groups with one in three Internet users worldwide being a child [1]. Without doubt, effective application of digital technology can offer great benefits for children and adolescents living in developing countries, most especially in promoting their health and well-being [1]. However, in the midst of the rapid digital transformation, millions of children are still left out of this increasingly connected world. Worldwide, 346 million adolescent and young people are not connected to the Internet. Unfortunately, many of them are in Africa, where 3 out of 5 young persons are offline as compared to 1 in 12 in Europe [1].

Globally, approximately 90 percent of adolescents and young people that are not connected to the Internet, currently live in Africa or Asia [2]. Furthermore, estimates in the 2017 report showed a digital gender gap across the world and most importantly in Africa [2]. In two-thirds of the countries across the world, there is higher male proportion of Internet users than female proportion, except in the Americas where the reverse was observed. Specifically, 50.9% of males in comparison to 44.9% of females have access to Internet worldwide. In Africa, there is a wider digital gender gap with 24.9% males in comparison to 18.6% of females having access to the Internet as at 2017 [2].

Although there are more than 90 million Internet users in Nigeria, which ranked the country as first in Africa and tenth with the highest number of mobile GSM subscribers across the world, more than half (53%) of the population still lack access to the Internet [3]. The statistics reported by Danbatta -- the Executive Vice-Chairman of National Communication Commission (NCC) in Nigeria, showed that despite the consistent increase in mobile GSM subscription in every quarter of the year, over 40 million Nigerians living in 200 communities still lack basic telephone services and Internet connectivity [3]. Danbatta also revealed that the persistent gap in digital access and use of mobile broadband Internet was attributed to lack of telecommunication infrastructure and electricity, most especially in rural areas where almost half of the Nigerian population resides [3].

Considering the above, there are multiple dimensions of digital gap or inequality which currently exist among male and female adolescents living in developed and developing countries, and those of different socio-economic class, which may influence the capacity to access and use the Internet or social media applications when seeking for health information as desired. Therefore, there is need to carefully assess the level of access and use of social media within the context of digital inequality among

adolescents in Nigeria. Hence, this study focused on assessment of the level of access and use of social media among adolescents in selected public and private secondary schools in Ile-Ife, Osun State, Nigeria.

## 2. Subjects and Methods

### 2.1 Study design and setting

A descriptive, cross sectional study was carried out among adolescents that consented in public and private secondary schools in Ile-Ife, Osun State, Nigeria.

### 2.2 Study population

The study included adolescents within the age range of 10 to 19 years in senior secondary classes enrolled as students in public high schools and approved private senior secondary schools in Ile-Ife who responded to a self-structured questionnaire (n= 596) during the period.

### 2.3 . Data collection

Data collection was conducted using a self-structured questionnaire divided into key sections for collection of relevant data from the target population. The test statements were modified to actualize the research objectives as stated in the research study. It was written in simplified English and also interpreted in Yoruba language where necessary for easy comprehension by the school adolescents who may prefer the indigenous language. Validity of the instrument was established through face and content validity techniques.

The questionnaire was critically reviewed for appropriate structuring of the questions to ensure clarity and easy comprehension based on the research objectives. Also, a pilot test was conducted among 30 randomly selected secondary school students in OAU International School, Ile-Ife. The responses to items in the questionnaire were evaluated to ensure clarity and internal consistency among the sampled participants. Few ambiguous questions identified were reframed. Reliability of the instrument was ensured through test-retest (r) method.

As at the time of study, the number of students in SSS 1 to 3 classes were 250 in Moremi High School (Public School) and 305 in Adventist Secondary School (Private School) in Ife Central, while in Ife East, there are 805 students in School of Science (Public School) and 497 students in Ambassadors College (Private School) making a total of 1,663. The sample size for this research study was primarily determined using the Cochran formula. [4] The calculated minimum sample size was 380; adjusting for 10% non-response rate increased the sample size to 422. However, 596 students gave consent and assent

from parents to participate in the study. Data collection was conducted for a period of five (5) weeks by paying scheduled visits to the schools on appointments. The 596 questionnaires administered were returned and completed appropriately; these were coded and analyzed with a response rate of 100%.

### 2.4 Data analysis

Data was analyzed using the IBM Statistical Product and Service Solutions (SPSS) Windows version 26. Descriptive statistics, using tables, percentages, graphical representations and inferential statistics (chi square) was done. The level of significance was set to $p < 0.05$.

### 2.5 Ethical consideration

Ethical approval for the study was obtained from the Research and Ethics Committee of the Institute of Public Health, OAU, Ile-Ife (HREC No: IPHOAU/12/1227). The certificate of ethical approval was submitted at the Office of Local Inspector of Education in each of the two Local Government Areas for issuance of Letter of Introduction and Permission to Collect Data directed to the Principal of selected public and private secondary schools in Ile-Ife.

## 3. Results

### 3.1 Socio-demographic characteristics of respondents

As shown in Table 1, the mean age of respondents was 15.15 ± 1.66 years and 14.71 ± 1.28 years for students in public and private schools respectively. Respondents between the age 14 to 16years account for the highest percentage majority in both public (72.2%) and private (78.0%) schools. There were more females (51.2% and 53.1%) than males (48.8% and 46.9%) among the respondents from the public and private schools respectively. Majority were from the Yoruba ethnic group in both the public (84.9%) and private (90.8%) schools as well. The highest percentage of respondents from the public schools (64.9%) received between 10 to 100 Naira as pocket money every week, likewise among those in private school (60.3%). All the socio-demographic variables showed a statistically significant difference between adolescents in public and private schools ($p<0.05$) except for gender and ethnicity (Table 1).

### 3.2 Internet Access and Use of Social Media among Secondary School Adolescents

In Table 2, majority (82.8% and 87.7%) of the students from both public and private schools have browsed the Internet. Moreover, the highest percentage of students from both public and private schools (67.5% vs. 91.7%), had their first Internet browsing experience at home.

**Table (1) Socio-demographic characteristics of the respondents**

| Variable | Public school F (%), (n=291) | Private school F (%) (N=305) | Total F (%) (N=596) | $\chi^2$, df, p value |
|---|---|---|---|---|
| **Age at last birthday:** | | | | |
| Mean Age | **15.15 ± 1.66** | **14.71 ± 1.28** | **14.73 ± 2.43** | $\chi^2$ = 19.69 |
| 10 – 13 years | 33 (11.3) | 50 (16.4) | 83 (13.9) | df = 2 |
| 14 – 16 years | 210 (72.2) | 238 (78.0) | 448 (75.2) | **p< 0.001** |
| 17 – 19 years | 48 (16.5) | 17 (5.6) | 65 (10.9) | |
| **Gender** | | | | $\chi^2$ = 0.21 |
| Male | 142 (48.8) | 143 (46.9) | 285 (47.7) | df = 1 |
| Female | 149 (51.2) | 162 (53.1) | 311 (52.3) | p= 0.640 |
| **Tribe** | | | | $\chi^2$ = 4.947 |
| Yoruba | 247 (84.9) | 277 (90.8) | 524 (88.0) | df = 1 |
| Igbo and Hausa | 44 (15.2) | 28 (9.2) | 72 (12.0) | p= 0.026 |
| **Religion** | | | | $\chi^2$ = 20.624 |
| Christian | 236 (81.1) | 285 (93.4) | 521 (87.4) | df = 1 |
| Islam and Traditional | 55 (18.9) | 20 (6.6) | 75 (13.6) | **p< 0.001** |
| **Class Level** | | | | |
| SS1 | 82 (28.2) | 83 (27.2) | 165 (27.7) | $\chi^2$ = 9.69 |
| SS2 | 115 (39.5) | 89 (29.2) | 204 (34.2) | df = 2 |
| SS3 | 94 (32.3) | 133 (43.6) | 227 (38.1) | **p= 0.008** |
| **Area of study** | | | | |
| Science Student | 207 (71.1) | 191 (62.7) | 398 (66.8) | $\chi^2$ = 41.26 |
| Commercial Student | 47 (16.2) | 17 (5.6) | 64 (10.7) | df = 2 |
| Arts Student | 37 (12.7) | 97 (31.8) | 134 (22.5) | **p< 0.001** |
| **Where do you live (residence) after school?** | | | | $\chi^2$ = 5.216 |
| At Home with parents | 234 (81.4) | 221 (72.5) | 458 (76.8) | df = 1 |
| Living with others | 57 (18.6) | 84 (27.6) | 138 (23.6) | **p=0.022** |
| **Pocket money every week** | | | | |
| No pocket money | 80 (27.5) | 21 (6.9) | 101 (16.9) | $\chi^2$ = 84.119 |
| 10 – 500 Naira | 189 (64.9) | 184 (60.3) | 373 (62.6) | df = 2 |
| 501 Naira and Above | 22 (7.5) | 100 (32.8) | 122 (20.4) | **p<0.001** |

Furthermore, private school students have higher frequency of browsing the Internet many times in a day (39.2%) than students in public schools (19.7%). Also, 58.1% and 63.2%, in both public and private schools respectively, reported that their parents permitted them to browse the Internet. Comparatively, all the variables influencing access to social media revealed a statistically significant difference ($p < 0.05$) between the two groups except for parental permission (Table 2).

**Table (2) Internet Access among Students in Public and Private Secondary Schools**

| Variables | Public school F (%) | Private school F (%) | Total F (%) | $\chi^2$, df, and p value |
|---|---|---|---|---|
| **Have you browsed the Internet before?** | | | | |
| Yes | 240 (82.8) | 297 (87.7) | 537 (90.1) | $\chi^2$= 38.24 |
| No | 32 (11.0) | 5 (1.6) | 32 (6.2) | df= 2 |
| I don't know about Internet | 18 (6.2) | 2 (0.7) | 22 (3.7) | **p<0.001** |
| **Where did you first browse the Internet?** | | | | |
| At home | 191 (67.5) | 276 (91.7) | 467 (80.0) | $\chi^2$= 41.24 |
| School | 20 (7.1) | 10 (3.3) | 30 (5.1) | df= 4 |
| Cyber-café | 8 (2.8) | 5 (1.7) | 13 (2.2) | **p< 0.001** |
| Friend's house | 14 (4.9) | 3 (1.0) | 17 (2.9) | |
| I don't know about Internet | 50 (17.7) | 7 (2.3) | 57 (9.8) | |
| **How often do you browse the Internet?** | | | | |
| Many times a day | 56 (19.7) | 119 (39.2) | 175 (29.9) | $\chi^2$= 37.50 |
| Once daily | 81 (28.7) | 66 (21.7) | 147 (25.1) | df= 6 |
| Once a week | 61 (21.6) | 60 (19.7) | 121 (20.6) | **p< 0.001** |
| Once in a month | 5 (1.8) | 16 (5.3) | 21 (3.6) | |
| Once in three months | 7 (2.5) | 12 (3.9) | 19 (3.2) | |
| Long time ago | 22 (7.8) | 24 (7.9) | 46 (7.8) | |
| Never browsed | 50 (17.7) | 7 (2.3) | 57 (9.8) | |
| **Do your parent allow you to browse the Internet anytime as you like?** | | | | $\chi^2$= 1.60 |
| Yes | 169 (58.1) | 192 (63.2) | 361 (60.7) | df= 1 |
| No | 122 (41.9) | 112 (36.8) | 234 (39.3) | p= 0.205 |

Among the private school respondents, more than half (58.2%) revealed that the cost of browsing the Internet was paid by their parents, compared to 36.2% of public-school students that paid for Internet data through their pocket money (Figure 1). In addition, majority of both public and private school students (58.3% and 63.2%, respectively) browse the Internet through their fathers' mobile phone; followed by use of brother's phone to access Internet at homes (public 18.4% vs. private 31.6%) (Figure 1). Few but similar proportion of public and private school students (8.9% and 9.5%, respectively)

accessed the Internet using a Cybercafé, while the least proportion in both schools use the School Internet Service (Figure 1).

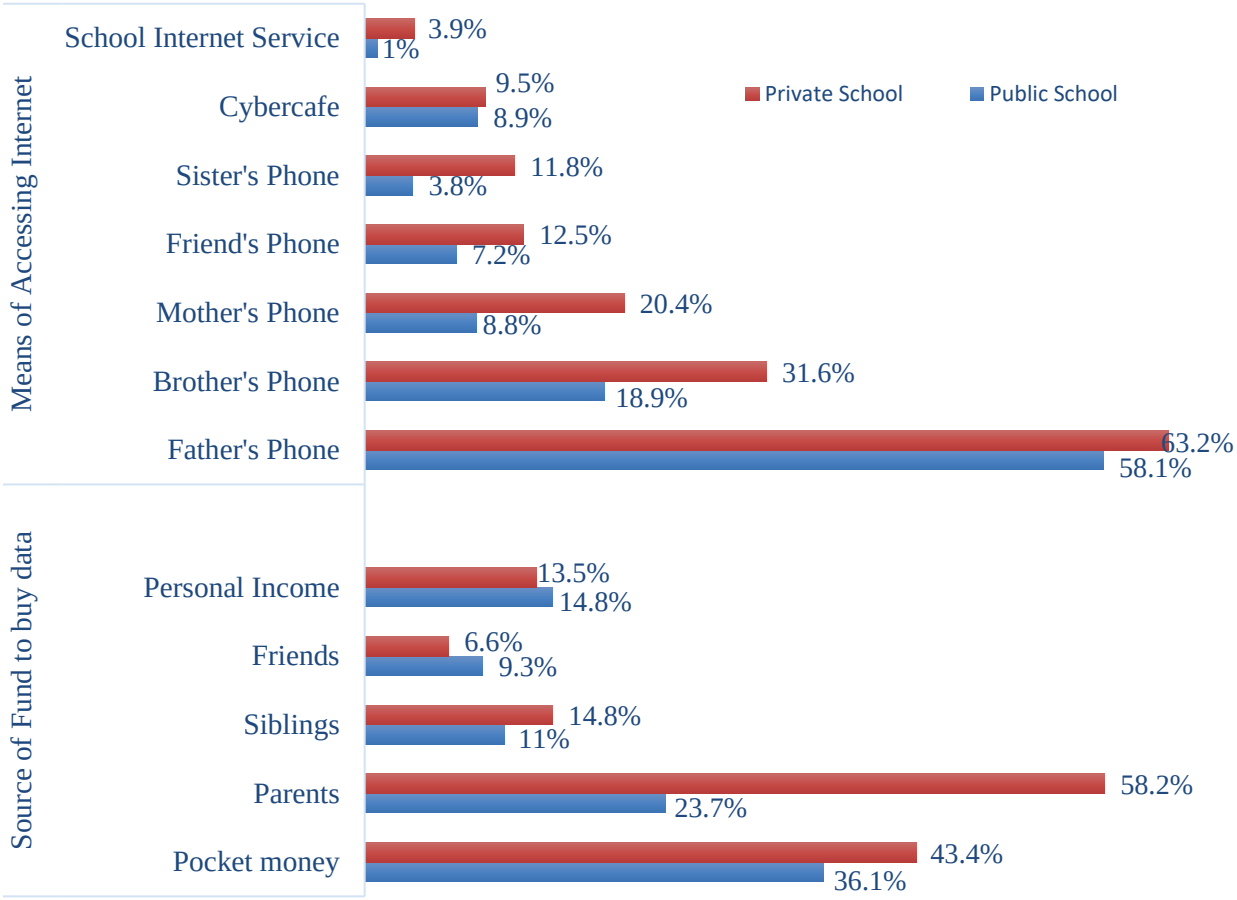


**Figure (1) Means of Accessing Internet and Source of fund to buy data among Secondary School Students**

A higher proportion of respondents from the private school frequently accessed Facebook website more than the public school (49.1% vs. 26.2%) (Figure 2). Facebook website also was found to be the most visited site among adolescents in both the 2 private and public schools (Figure 2). Another highly visited website was Google, with students in private schools (22.3%) having higher rates of Google visits than public school students (11.3%) (Figure 2).

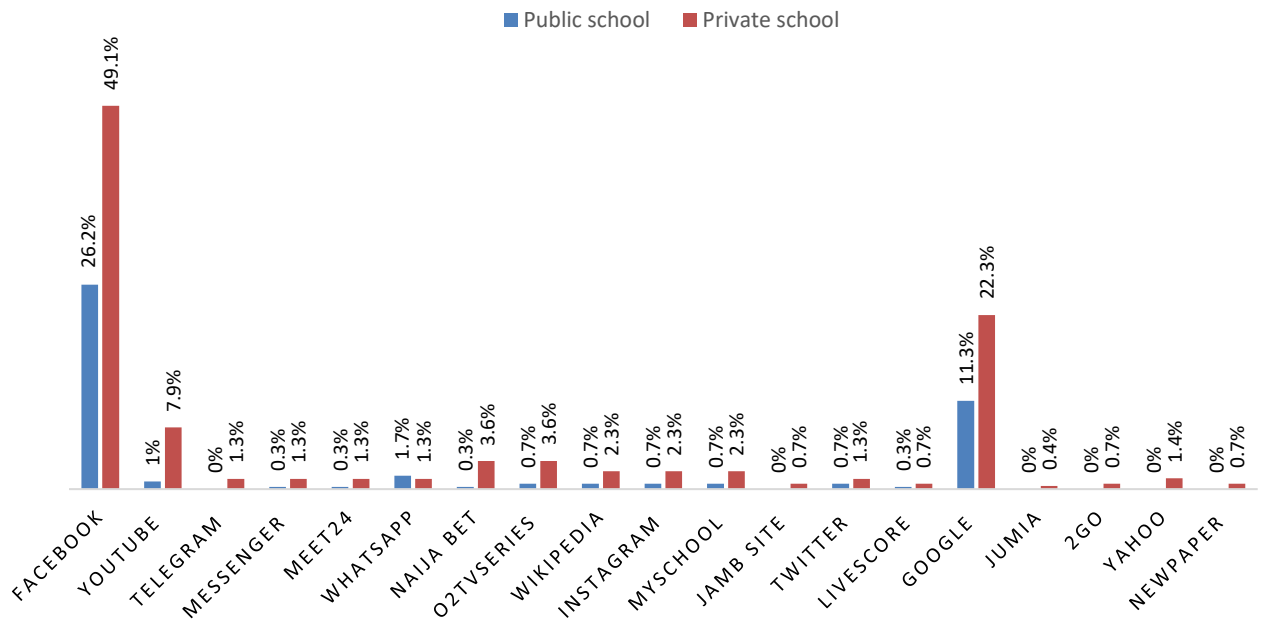


**Figure (2) Common Websites and Social Media visited by Secondary School Students**

Figure 3 showed that students in private school had the highest percentage (97.7%) of Internet assess compared to 82.8% of public-school students. Moreover, 63.9% of adolescent students in private schools use social media, compared to 41.2% in public school (Figure 3).

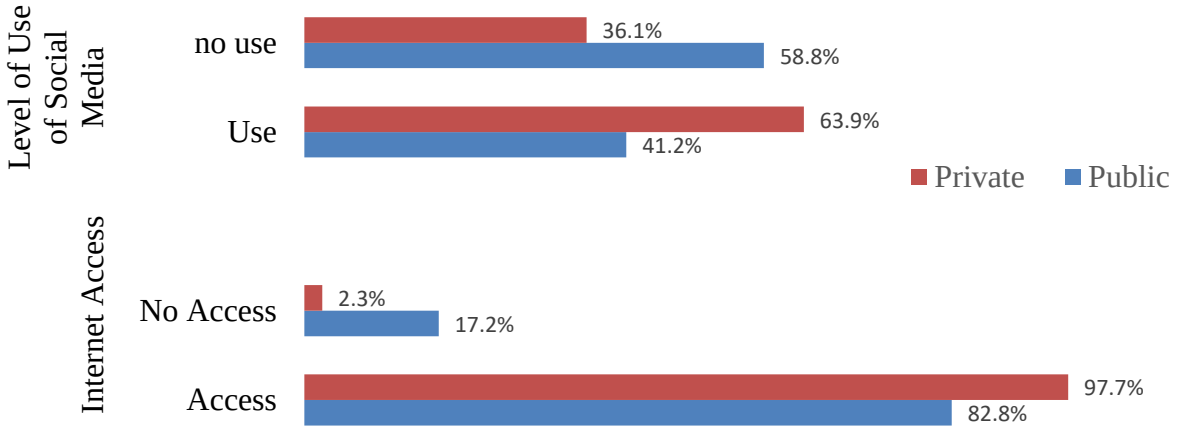


**Figure (3) Internet Access and Level of Use of Social Media among Students in Public and Private Schools**

Frequency of visits to social media sites also showed that a higher proportion (48.5%) of private school students visit Facebook always, more than 36.8% of public-school students (Table 3). Also, a higher proportion of public-school students (42.3%) than those in private schools (31.1%) had never visited WhatsApp, while 29.2% of private school students and 19.9% of public-school students had used the social media application (Table 3). More so, 17.7% of students in the private schools visit YouTube always, compared to 9.6% of those in public schools. Nonetheless, there was no significant difference ($p>0.05$) in the frequency of visit to some Internet websites and social media applications by students in public and private schools, except for WhatsApp ($p= 0.003$), 2go ($p= 0.001$), Instagram ($p= 0.016$) and YouTube ($p= 0.001$) (Table 3).

**Table (3) Distribution of respondents by frequency of use of social media platforms**

| Applications | Public school F (%) | | | | Private school F (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Always** | **Sometimes** | **Rarely** | **Never** | **Always** | **Sometimes** | **Rarely** | **Never** | $\chi^2$ | **p-value** |
| Facebook | 107 (36.8) | 110 (37.8) | 23 (7.9) | 51 (17.5) | 148 (48.5) | 99 (32.5) | 29 (9.5) | 29 (9.5) | 2.24 | 0.520 |
| WhatsApp | 58 (19.9) | 86 (29.6) | 24 (8.2) | 123 (42.3) | 89 (29.2) | 81 (26.6) | 40 (13.1) | 95 (31.1) | 13.96 | **0.003** |
| 2go | 15 (5.2) | 43 (14.8) | 40 (13.7) | 193 (66.3) | 5 (1.6) | 19 (6.2) | 58 (19.0) | 223 (73.1) | 19.44 | **0.001** |
| YouTube | 28 (9.6) | 129 (44.3) | 78 (25.6) | 122(40.0) | 54 (17.7) | 51 (16.7) | 28 (9.6) | 129 (44.3) | 6.05 | **0.001** |
| Twitter | 25 (8.6) | 56 (19.2) | 33 (11.3) | 177 (60.8) | 21 (6.9) | 54 (17.7) | 43 (14.1) | 187 (61.3) | 1.64 | 0.649 |
| Instagram | 38 (13.1) | 61 (21.0) | 26 (8.9) | 166 (57.0) | 50 (16.4) | 64 (21.0) | 49 (16.1) | 142 (46.6) | 10.30 | **0.016** |
| Snapchat | 29 (10.0) | 42 (14.4) | 34 (11.7) | 186 (63.9) | 35 (11.5) | 60 (19.7) | 39 (12.8) | 171 (56.1) | 4.38 | 0.223 |
| Imo | 20 (6.9) | 32 (11.0) | 17 (5.8) | 222 (76.3) | 18 (5.9) | 33 (10.8) | 21 (6.9) | 233 (76.4) | 0.47 | 0.923 |
| Facebook Messenger | 94 (32.3) | 81 (27.8) | 30 (10.3) | 86 (29.6) | 122 (40.0) | 77 (25.2) | 23 (7.5) | 83 (27.2) | 4.38 | 0.223 |
| Telegram | 22 (7.6) | 27 (9.3) | 33 (11.3) | 209 (71.8) | 19 (6.2) | 26 (8.5) | 34 (11.1) | 226 (74.1) | 0.58 | 0.899 |

Statistically, six demographic variables: gender ($p = 0.001$), religion ($p = 0.045$), school type ($p = 0.001$), class level ($p = 0.004$), place of residence after school ($p = 0.003$) and weekly pocket money ($p = 0.001$) had significant association with access to social media among the secondary school adolescents (Table 4). However, in the overall sample population, there was no significant association between the level of Internet access and use of social media ($p = 0.280$) (Table 4).

**Table (4) Association between Socio-demographic factors and access to Social Media; and Association between Social Media Use and Internet Access**

| | Socio-demographic factors | Access to social media | | $\chi^2$ | df | p value |
|---|---|---|---|---|---|---|
| | | Access | No Access | | | |
| **Association between socio-demographic factors and access to social media** | **Age at last birthday** | | | | | |
| | 10-13 | 74 (13.8) | 8 (14.0) | 0.305 | 2 | 0.858 |
| | 14-16 | 403 (75.0) | 44 (77.2) | | | |
| | 17-19 | 60 (11.2) | 5 (8.8) | | | |
| | **Gender** | | | | | |
| | Male | 269 (50.1) | 15 (26.3) | 11.67 | 1 | **0.001** |
| | Female | 268 (49.9) | 42 (73.7) | | | |
| | **Tribe** | | | | | |
| | Yoruba | 6 (1.1) | 1 (1.8) | 0.18 | 2 | 0.130 |
| | Igbo | 58 (10.8) | 6 (10.5) | | | |
| | Hausa | 473 (88.1) | 50 (85.4) | | | |
| | **Religion** | | | | | |
| | Christian | 476 (88.6) | 44 (77.2) | 6.198 | 2 | **0.045** |
| | Islam | 56 (10.4) | 37 (21.1) | | | |
| | Traditional | 5 (0.9) | 1 (1.8) | | | |
| | **School type** | | | | | |
| | Public | 240 (44.7) | 50 (87.7) | 38.18 | 1 | **0.001** |
| | Private | 297 (55.3) | 7 (12.3) | | | |
| | **Class level** | | | | | |
| | SS1 | 140 (26.1) | 24 (42.1) | 11.06 | 2 | **0.004** |
| | SS2 | 181 (33.7) | 22 (38.6) | | | |
| | SS3 | 216 (40.2) | 11 (19.3) | | | |
| | **Area of study** | | | | | |
| | Science Student | 360 (67.0) | 36 (63.2) | 0.740 | 2 | 0.691 |
| | Commercial Student | 56 (10.4) | 8 (14.0) | | | |
| | Arts Student | 121 (22.5) | 13 (22.8) | | | |
| | **Where do you live or reside after school?** | | | 22.92 | 8 | **0.003** |
| | In School Hostel | 69 (12.8) | 2 (3.5) | | | |
| | At Home with parents | 412 (76.7) | 45 (78.9) | | | |
| | Living alone | 9 (1.7) | 1 (1.8) | | | |
| | Living with father only | 7 (1.3) | 0 (0.0) | | | |
| | Living with mother only | 23 (4.3) | 3 (5.3) | | | |
| | Living with Grandparents | 5 (0.9) | 3 (5.3) | | | |
| | Living sibling | 4 (0.7) | 0 (0.0) | | | |
| | Living with family relative | 8 (1.5) | 2 (3.5) | | | |
| | Living with friends | 0 (0.0) | 1 (1.8) | | | |
| | **Weekly pocket money** | | | 19.10 | 3 | **0.001** |
| | No pocket money | 81 (15.1) | 19 (33.2) | | | |
| | 10-500 | 336 (62.6) | 36 (63.2) | | | |
| | 501-1000 | 69 (12.8) | 1 (1.8) | | | |
| | Above 1000 | 51 (9.5) | 1 (1.8) | | | |
| **Association between Social Media Use and Internet Access** | **Social Media Use** | **Access to Internet** | | **Chi Square** | **df** | **p value** |
| | | **Access** | **No Access** | | | |
| | Use Social Media | 280 (52.1) | 34 (59.6) | 1.166 | 1 | 0.280 |
| | Do not use Social Media | 257 (47.9) | 23 (40.4) | | | |
| | Total | 537 (100.0) | 57 (100.0) | | | |

## 4. Discussion

### 4.1 Socio-demographic characteristics of respondents

The mean age of respondents in the public and private schools were 15.2 ± 1.7 and 14.7 ± 1.3 respectively. This is similar to mean age among survey participants reported by Pew Research Center in United States of America; and the mean age of respondents in findings of Ellen et al., in University of Wisconsin, as well as Adum et al., in Nnamdi Azikiwe University, Awka, Nigeria [5, 6, 7]. In addition, more female students participated in this study in both public and private schools. Also, majority of the students reside with their parent and were mostly given weekly pocket money ranging from 10 to 500 Naira. These findings were consistent with Adum et al. in Nnamdi Azikiwe University, Awka [7].

### 4.2 Internet Access and Use of Social Media

This study further revealed high rate of Internet access and use of social media among school adolescents in both public and private schools which supported earlier findings from several studies by Kettle, et al.; Lenhart, Pew Internet & American Project; Alabi; Shosanya [8, 9, 10, 11, 12]. The high rate of Internet access and use of social media was also in agreement with the projections of the International Telecommunication Union [13]. Findings of this study also supported the report of Lenhart that 92.0% of the adolescents had access to online information daily [9], the report of Pew Research Centre that higher proportion of adolescents had access to Internet [14] and the report of International Telecommunication Union [2] that emphasized that Nigeria is one of the leading countries with high growth rate of Internet users through digital mobile broadband, mostly among teenagers and young adult populations. However, a higher proportion of private school adolescents had Internet access and frequently use social media (63.9% vs. 41.2%) than public school adolescents in this study. This revealed a current state of digital inequality between these two socio-demographic sub-groups of adolescent population in the same locality.

Also, Olowole agreed that Nigeria is now the 8th country in the world and 1st in Africa with the highest number of Internet users [15] with findings from a nationwide study by Shosanya revealing that more than 70% of adolescents in the North-Central; over half in South-West, North-West and South-East use the Internet for social interactions while South-South zone of Nigeria, had the lowest percentage of Internet use among adolescents [12]. Moreover, 80% of the school adolescents in this study first browsed the Internet in their homes with majority (58.3% in public and 63.2% in private schools) using their father's phone to access the Internet. The high rate of usage of father's and brother's phone among majority of school adolescents, (a total of 76.7% public and 94.8% private) despite having a higher female percentage in this study, was not consistent with reports of Lenhart that 73% of adolescents in the USA

browse the Internet through their personal mobile phones [9] and Shosanya that majority of adolescents in North-Central and South East use of personal mobile phones to access the Internet [12]. Considering the possibility of digital inequality, a consistent proportion of school adolescents in this study had no Internet access 17.2% and never browsed before (17.7%); especially among public school adolescents. This consistent percentage of digital exclusion might not be a mere statistical coincidence..

**5. Conclusion**

This study concluded that majority of the secondary school adolescents have indirect access to Internet and social media through mobile phones of family members, which means that relevant health information and education can be made available to them on the Internet and Facebook by professionals in mutual partnership with their parents and guardians.

According to the findings of this study, the authors recommend:

- Active engagement of parent and family members on how to positively use Internet and social media for self-development among adolescents, rather than preventing their use of Internet or social media which is practically becoming impossible in the 21st Century.
- Since most adolescents have access to Internet and use social media, health practitioners should adopt use of social media platforms (especially Facebook) for meaningful online health education and communication with adolescents.

Government should develop and implement policies that will address digital inequality through the Ministry of Communications and Digital Economy, with the ultimate goal of facilitating Internet access and responsible use of social media among adolescents in public schools. This may help in bridging the digital divide between public and private school adolescents nationwide, which may result into short and long-term disadvantages with future socio-demographic consequences; if not addressed on time.

## 6. Declarations

### 6.1 Author's contribution

All the authors contributed to the concept and design of the study. Priscilla Ibubelem Godwin-Ewu, Peter O. Adedeji and Godwin A. Ewu contributed to data acquisition and data collection, cleaning and coding. Peter O. Adedeji performed data analysis, Peter O. Adedeji and Godwin A. Ewu participated in interpreting results and discussion of findings. Peter O. Adedeji drafted the first manuscript, which was thoroughly reviewed by Omolola O. Irinoye. Final peer-review corrections were done by Peter O. Adedeji, after which all authors proof-read to ensure quality satisfaction..

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## 6.4 Conflict of interest

All the authors declare that there is no conflict of interest.

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