Awareness and Attitudes of Art Students and Lecturers on Health Hazards Associated With Fine and Applied Arts Making in Nigeria

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Abstract
Background: Art-making can pose significant risks to the health and safety of artists. Some art materials and equipment are hazardous.
Objective: This article highlights the various hazards caused by the use of these materials in art-making and actions that could be taken to prevent it.
Methods: We used documentary research approaches to find out and study the relevant literature sources and to analyze and synthesize the information got.
Result: The results showed that art students and lecturers are not aware of the health hazards of art materials they use in their art practice, and they have a nonchalant attitude towards taking appropriate health precautions in the use of these art materials. We also observed that changing the attitudes of university art students, and lecturers on the health hazards involved in art-making would require several actions.
Conclusion: The awareness of health hazards associated with art-making/studio practice is useful to help art students and lecturers to increase their health precautions in using art materials.

Keywords
health, risk, the safety of artists, art materials, hazards, Nigeria, awareness, students, lecturers, art-making, attitude

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Introduction
Visual arts materials that contain toxic chemicals are hazardous to human health. Awareness of hazardous substances in art materials can prevent illness and injury. Lecturers and student artists are exposed to a variety of potentially poisonous diseases.1 Artist frequently utilize art materials containing poisonous chemicals without good precautions and repeatedly without the knowledge that their art materials are dangerous.2 We are having a recent brandish of challenges in Nigeria universities especially where fine and applied arts, arts education and creative arts are studied. This challenge bothers more on the safeguard of the art students and the carelessness in taking health precautions on the various art materials they use in their art-making. Many of the methods and techniques used in creating works of art bring us into contact with hazardous materials and processes, as well as tools and equipment that require the use of proper, safe procedures. Being aware of potential hazards in art-making, artists can work safely and thereby reduces the likelihood of having an accident in the studio. Alternatively, unnecessary exposure to a hazardous substance.3

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It is a worldwide concern that every art student has an avenue to quality arts instruction. In Nigeria, students and faculties in the institutions where fine and applied arts are undertaken are still battling almost ensuring to achieve this goal. The quality and measure of scholastic arts delivery is a recount for some other day just in the circumstance of this expression, we demand to look at the issue that bothers on the wellness and safety of the fine and applied arts students in Nigeria universities while beneath the caution of the schools. Arts students in Nigeria universities have a very low awareness of the health hazards associated with their art-making and studio practice. Making beautiful works of art can be immensely rewarding for artists. It can also be deadly. From pre-modern times when medical scientific discipline was still ill-equipped to judge common threats, to the present day. When artists repeatedly still establish their art ahead of their welfare, obvious art supplies have been a root of danger for innumerable painters and sculptors and have done life-threatening afflict to almost of art history’s some renowned names. Artists are passionate about their work and adopt creativeness in many ways. Most paint, involved in textile designs, graphic designs Art studio environments can be perilous places. Sculptors who work in wood and gemstone utilize enormous sharp knives, blades, and saws. Others employ heat to weld big, arduous pieces of metal that may possess sharp edges. Most artists paint very big canvases, necessitating high ladders and alternative physical dangers. Many utilize types of glue and adhesives that can give off the hazardous exhaust. Dangerous materials likewise exist in the media artists utilize, particularly in disciplines like painting, textiles, and ceramics.

The health threats related to art-making has been recognized historical since the time of the old masters and art movements like Renaissance, Baroque, Romanticism, Impressionism, Neoclassicism, Expressionism and so on. Most of the artists that belong to these movements suffered one ailment or other during their art practices. Peter Paul Rubens (1577–1640), Pierre-Auguste Renoir (1841–1919), and Raoul Dufy (1877–1953) are some of the historic cases of health problems linked with art materials. Altogether they suffered from devastating arthritis and other ailments. And entirely were known for using poisonous colours from poisonous metals such as antimony, arsenic, cadmium, cobalt, chromium, lead, manganese, and mercury. When these metals are taken into the body, they can subdue enzymes, exterminate proteins, and upsurge vulnerability to infections. Toxic chemicals normally found in art materials pose possible health risks for uninformed artists. These health risks, ranging from inconsequential skin irritation to serious harm to kidneys, lungs, heart and other vital organs, are minimized through deterrence and simple precautions.

Art-making can be very dangerous to the health and safety of artists. Some of the art materials are quite dangerous to the body. The nature of the art studio for making art can also constitute health challenges to artists. Most art students in Nigerian universities are not aware or simply ignore the health hazards and risks associated with the materials they are working with. They ignore the fact that students should ventilate their art studios. Some even lock themselves up in the studios to hide their art techniques from other students and lecturers. Students do not handle most of the art materials, especially chemicals like solvents, turpentine, or even simple linseed oil on rags, carefully. Many professional and practising artists in Nigeria have suffered many ailments in this regard without knowing the cause.

Most importantly, the materials they use are often locally sourced because of non-availability and high cost of foreign art materials. Moreover, they produce most of these local materials without considering its adverse effect on the human being. They are very crude and hazardous. An art student in one of the Nigeria Universities constructed improvised airbrush and used it to varnish his poster colour artworks. He also improvised fixatives locally by mixing thinner and glossy wood polish. After using his mouth to blow the fixative on his artworks with the locally improvised airbrush, he collapsed and two of his colleagues rushed him to the hospital. The doctor diagnosed him and found out that he inhaled a dangerous chemical.

There are many cases like that and people attribute it to witchcraft without knowing that the chemicals they use in making their art cause it. The study provides an overview of approximately the collective risks associated with art-making. While we cannot cover every possible hazard, we examined the important areas in art like painting, sculpture, ceramics, textiles and graphics, and emphasized where dangers might prowl in the artistic development of these areas. The literature and some documents in art support the fact that many art supplies have poisonous substances, which we considered injurious to the wellbeing of artists, lecturers, and students. It is pertinent therefore to ascertain whether students and lecturers in art schools in Nigeria are aware of these poisonous substances. It is also important to verify their attitudes towards the use of these dangerous art materials in their art-making. Therefore, the purpose of the study is to investigate the awareness and attitudes of art students and lecturers on health hazards associated with fine and applied arts making in Nigeria. We also discussed the means of infection and toxic and harmful art materials.
Research Questions
1. Are students and lecturers aware of health hazards of art materials?
2. Are students and lecturers aware of means of infection of hazardous art materials?
3. Are students and lecturers aware of toxic and harmful art materials for art-making?
4. What is the attitude of students and lecturers on the health hazards of art materials?

Hypotheses
1. The association of respondents and awareness of health hazards of art materials is not statistically significant.
2. There is no significant association of respondents and means of infection of hazardous art materials.
3. The association of respondents and toxic and harmful art materials is not statistically significant.
4. There is no significant association of respondents and attitude on health hazards of art materials

Description of the Study Location
We conducted the study in the South East Zone, one of the 6 zones in Nigeria. South-East Nigeria occupies 41,440 km² approximately. The climate is essentially tropical, with humid, high temperatures, and distinct wet and dry seasons. The study took place in all the South East universities that offer fine and applied arts and other related art disciplines like creative arts, arts education and art and designs. They are five universities in number.

Methods
Study Design and Population
The study utilized a cross-sectional survey design. The sampling frame, from the five universities in South East, Nigeria that offer fine and applied arts records comprised all art lecturers (183), students (875) while those randomly selected (400) through proportional to size sampling technique were the study population. The five universities were University of Nigeria, Nsukka; Nnamdi Azikiwe University, Awka; Alex Ekwueme University, Ndufu Aluke AEU, Abakaliki; Imo State University, Owerri (IMSU); and Abia State University, Uturu Okigwe (ABSU) respectively. Below shows, the population spread according to the universities:

|        | STUDENT | LECTURER | TOTAL |
|--------|---------|----------|-------|
| UNN    | 227     | 58       | 285   |
| NAU    | 198     | 33       | 231   |
| AEU    | 126     | 25       | 151   |
| IMSU   | 167     | 36       | 203   |
| ABSU   | 157     | 31       | 188   |

Sample Size Determination
The Taro Yamane’s formula below was used to calculate the sample size of the respondents that participated in the study. According to Taro Yamane for a 95% confidence level and \( p = 0.5 \), size of the sample should be

\[
n = \frac{N}{1 + N(e^2)}
\]

Where \( N \) is the population size and \( e \) is the level of precision.

We used this formula for the population, in which \( N = 1058 \) with \( \pm 5\% \) precision.

Assuming a 95% confidence level and \( p = 0.5 \), we get the sample size as

\[
n = \frac{1058}{1 + 1058 (0.5)^2} = 399.62 = 400
\]

The desired sample size \( n = 400 \).

We calculated sample sizes for different schools from their respective population, which we gathered during our investigation. The calculations below show the sample values and their respective proportions.

| University | Sample Size | Proportion |
|------------|-------------|------------|
| UNN        | 285/1058(100%) = 27% | \((285/1000)(400) = 108\) |
| NAU        | 231/1058(100%) = 22% | \((22/100)(400) = 87\) |
| AEU        | 151/1058(100%) = 14% | \((14/100)(400) = 57\) |
IMSU \( \frac{(203/1058)100\%}{(19/100) (400)} = 19\% \) 
\( \frac{(18/100)}{77} \)

ABSU \( \frac{(188/1058)100\%}{(18/100) (400)} = 18\% \) 
\( \frac{(18/100)}{71} \)

However, out of 400 respondents, 392 were eventually used for the study. Eight of the respondents did not submit their questionnaire. 67 (17.1%) lecturers and 325 (82.9%) were used for the study.

Data Collection and Analysis

Our study took place between April and May 2019. The study utilized a modified version of the validated data collection questionnaire. The study instruments were pretested at a different university from the one we used for the study. The university is comparable to the universities we used for the study. Errors and ambiguous questions sequencing were corrected before field data collection.

Materials

The study instruments had sections on demographic information, awareness, attitudes, means of infection and toxic and harmful art materials on art-making. The researchers constructed the study questionnaire, Health Hazards of Art Materials (HHAM). The respondents returned filled instruments that were used in the study; a response rate of 98%.

Data Analysis

We checked and cleaned the data collected for completeness and accuracy. The questionnaires were coded, entered, and analyzed using IBM-SPSS version 25. We tested the data in the questionnaires for internal consistency and had very high Cronbach’s \( \alpha \) value of 0.87, which indicates a high level of internal consistency for our scale that comprised 48 study items. Moreover, we presented demographic characteristics and other univariate variables by summary statistics using frequency/percentages for categorical variables.

Furthermore, the questionnaire respectively had 13, 9, 6, and 20 items on awareness of health hazards, means of infection, toxic and harmful materials, and the attitude of respondents. The awareness was measured by a 2-point scale: “Aware,” “Not Aware,” for research questions 1, 2 and 3, respectively. We categorized attitude as positive and negative for research question 4.

For bivariate analysis, Chi-square statistics were used to assess the type of association between respondents and awareness of health hazards, means of infection, toxic and harmful materials and attitude of respondents by the Pearson Chi-square statistics, with the level of significance at \(<5\%\).

Inclusion and exclusion criteria. This study was limited to only five universities in the South East, Nigeria that offer fine and applied arts and other art-related disciplines. The five universities were University of Nigeria, Nsukka; Nnamdi Azikiwe University, Awka; Imo State University, Owerri; Abia State University, Uturu Okigwe and Alex Ekwueme University, Ndufu Aluke, Abakaliki.

Results

Demographic Characteristics of Respondents

We presented the demographic characteristics of respondents in Table 1. The study revealed that over half (325) respondents were students while 52% were females. The mean age (SD) of respondents was 37.58 \( \pm \) 20.18 years, while 232 (59.18%) were between 17 and 28 years. In this study, students were 82.9% and lecturers 17.1%.

Results

Awareness and Attitudes of Health Hazards of Art Materials in Art-Making

Data in Table 2 on awareness of health hazards of art materials showed the scores of items 1, 2, 3, 4, 5, 9, 10, 12, and 13. These scores indicated that respondents are not aware of toxic injury of health hazards of art materials while items 6, 7, and 8 showed that the respondents are aware of toxic injury on health hazards of art materials. However, Table 3 showed that items 14 to 22 with a high percentage above 50% under Not Aware. These scores indicated that respondents are not aware of the

| Description of Variables | Frequency (n) | Percentage (%) |
|--------------------------|---------------|----------------|
| The age range of respondents (n = 392) | | |
| \( \leq 17 \) | 141 | 36 |
| 18–28 | 111 | 28.3 |
| 29–38 | 59 | 15.1 |
| 39–48 | 36 | 9.2 |
| 49–58 | 28 | 7.1 |
| 59–68 | 17 | 4.3 |
| Gender (n = 392) | | |
| Male | 188 | 48 |
| Female | 204 | 52 |
| Respondents (n = 392) | | |
| Students | 325 | 82.9 |
| Lecturers | 67 | 17.1 |
means of infection of health hazards of art materials. The data in Table 4 showed that items 23 to 28 with high frequency and percentage above 50% under Not Aware. These scores indicated that respondents are not aware of toxic and harmful art materials for art-making. Besides, Table 5 showed that items 29 to 48 with high frequency and percentage above 50% under Negative attitude. These scores indicated that respondents have a negative attitude on health hazards of art materials for making-art.

The Measure of Association Among Demographic Indices and Awareness of Health Hazards

Our study revealed no statistically significant associations between respondents and awareness of health hazards $\chi^2 = .020, 1, p = .888$ as shown in Table 6 while the association of respondents and awareness of means of infections was significant $\chi^2 = 12.704, 1, p = .000$ (Table 7). Besides, Table 8 showed the association of respondents and awareness of toxic and harmful materials was significant $\chi^2 = 13.618, 1, p = .000$ while respondents associated with attitudes and health hazards were statistically significant $\chi^2 = 11.375, 1, p = .001$ as shown in Table 9.

Discussion

The research objective was to create awareness on health hazards associated with art-making and highlight ways of changing the attitudes of art students towards the use of art materials in their studio practice. The results
showed that art students and lecturers are not aware of the health hazards of art materials they use in their art practice, means of art materials infections, and toxic and harmful materials, and they have a nonchalant attitude towards taking appropriate health precautions in the use of these art materials. This was indicated by high percentage ratings by the respondents. The study also revealed no statistically significant associations between

Table 4. Frequency and Percentage of Respondents on Toxic and Harmful Art Materials.

| S/N | Items                                                                 | Aware | Not Aware | Frequency | Percent | Frequency | Percent |
|-----|----------------------------------------------------------------------|-------|-----------|-----------|---------|-----------|---------|
| 23  | Paints, dyes, printing inks, enamels and glazes which contain toxic heavy metals | 49    | 12.5      | 343       | 87.5    |
| 24  | Paints which contain carcinogenic substances                         | 110   | 28.1      | 282       | 71.9    |
| 25  | Substances which release harmful gases                              | 26    | 6.6       | 366       | 93.4    |
| 26  | Some chemicals used in screen-printing                              | 18    | 4.6       | 374       | 95.4    |
| 27  | Materials that contain asbestos                                     | 18    | 4.6       | 374       | 95.4    |
| 28  | Corrosive liquids such as strong acid                               | 22    | 5.6       | 370       | 94.4    |

KEY: Benchmark for **Aware**: 1–49% = Not Aware, 50–100% = Aware; then for **Not Aware**: 1–49% = Aware, 50–100% = Not Aware.

Table 5. Frequency and Percentage of Attitudes of Students and Lecturers on Art Materials.

| S/N | Item                                                                 | Positive | Negative | Frequency | Percent | Frequency | Percent |
|-----|----------------------------------------------------------------------|----------|----------|-----------|---------|-----------|---------|
| 29  | Handling of and Safety Precautions Against Toxic Gases, Fumes and Dust | 21       | 5.4      | 371       | 94.6    |
| 30  | Safe Use of Chemicals                                                | 38       | 9.7      | 354       | 90.3    |
| 31  | Safe Use of Acids                                                    | 47       | 12.0     | 345       | 88.0    |
| 32  | Safe Use of Paints                                                   | 55       | 14.0     | 337       | 86.0    |
| 33  | Storage of Materials                                                 | 78       | 19.9     | 314       | 80.1    |
| 34  | Safe Use and Maintenance of Tools and Equipment                      | 117      | 29.8     | 275       | 70.2    |
| 35  | Safe Practices in the Visual Arts Room                               | 93       | 23.7     | 299       | 76.3    |
| 36  | Safe Use of Electrical Appliances                                    | 156      | 39.8     | 236       | 60.2    |
| 37  | Fittings in an art studio                                            | 39       | 9.9      | 353       | 90.1    |
| 38  | The layout of the art studio                                         | 29       | 7.4      | 363       | 92.6    |
| 39  | Management of the art studio                                         | 128      | 32.7     | 264       | 67.3    |
| 40  | Setting rules for art-making in the art studio                       | 53       | 13.5     | 339       | 86.5    |
| 41  | Safe conduct of art-making                                           | 89       | 22.7     | 303       | 77.3    |
| 42  | Safe conduct of fines and applied arts learning activities inside and outside school | 39       | 9.9      | 353       | 90.1    |
| 43  | Fire prevention                                                      | 34       | 8.7      | 358       | 91.3    |
| 44  | First-aid cabinet                                                    | 39       | 9.9      | 353       | 90.1    |
| 45  | Eliminating smoking from the studio                                  | 85       | 21.7     | 307       | 78.3    |
| 46  | Safe substitutes for toxic art materials                              | 47       | 12.0     | 345       | 88.0    |
| 47  | Health prevention programmes for artists                             | 45       | 11.5     | 347       | 88.5    |
| 48  | Access to group health insurance plans                                | 54       | 13.8     | 338       | 86.2    |

KEY: Benchmark for **Positive**: 1–49% = negative attitude, 50–100% = positive attitude; then for **Negative**: 1–49% = positive attitude, 50–100% = negative attitude.

Table 6. Association of Respondents and Awareness of Health Hazards.

| Respondents | Aware | Not Aware | Total |
|-------------|-------|-----------|-------|
| Students    | 134 (41.2%) | 191 (58.8%) | 325   |
| Lecturers   | 27 (40.3%)  | 40 (59.7%)  | 67    |

Chi-Square, $\chi^2 = .020$, 1, $p = .888$ (Not Significant).

Table 7. Association of Respondents and Awareness of Means of Infections.

| Respondents | Aware | Not Aware | Total |
|-------------|-------|-----------|-------|
| Students    | 44 (13.5%) | 281 (86.5%) | 325   |
| Lecturers   | 20 (29.9%)  | 47 (70.1%)  | 67    |

Chi-Square, $\chi^2 = 12.704$, 1, $p = .000$ (Significant).
respondents and awareness of health hazards: $\chi^2 = 0.20$, 1, $p = .888$. The association of respondents and awareness of means of infections was significant $\chi^2 = 12.704$, 1, $p = .000$. The association of respondents and awareness of toxic and harmful materials was significant $\chi^2 = 13.618$, 1, $p = .000$, and the Association of Respondents and Attitudes on Health Hazards was statistically significant $\chi^2 = 11.375$, 1, $p = .001$.

The students and lecturers, teachers, hobbyists, or children are exposed to a wide variety of hazardous materials, and chemicals in their art-making. Unfortunately, the artist often uses chemicals without taking adequate precautions. Some artists are unaware that they are exposing themselves and working at home, as many artists do expose their spouses and children to these hazardous materials. Many contemporary artists are working in new and diverse media. Some are reporting health problems and injuries resulting from their use of materials on which they have had insufficient information. In Nigeria, the student artists do not take any precautions in handling these dangerous art materials. They do not even read the directions on the labels of some of the materials before use. This may be because of improper or non-existent training as regards the use of art materials to avoid health hazards. Some of the student artists and their lecturers are very careless in handling these materials due to ignorance and unawareness of the adverse effect these materials can cause. Findings indicate that art students and lecturers are unaware of the hazardous nature of the art materials. Unfortunately, many of them are unaware that the chemicals and other materials they work with can create hazards as well as art. Particularly vulnerable are the elderly, children, and people with existing health problems. Artists who are asthmatic, for example, should be especially careful not to inhale sprays, mists, or specks of dust. The problem is not new; their painting materials may have adversely affected some famous painters of the past. For instance, Dr Bertram Camow of the University of Illinois School Of Public Health has theorized that the haloes around lights and the blurring of stars in Vincent Van Gogh’s later paintings may have indicated lead-induced swelling of the optic nerve (personal communication).

The painters Rubens, Renoir, and Dufy suffered from rheumatoid; arthritis and that flea suffered from scleroderma. Because these four painters used metallic compounds such as arsenic sulphide, cadmium sulphide and mercury sulphide in their art-making, this exposure may have contributed to the development of the inflammatory disease. Today, artists’ exposure to potentially damaging chemicals is generally lower, but artists are still ill by their work with cadmium, lead, and nitrogen oxides. Unfortunately, few statistics exist. Often, artists will not know the specific health hazards posed by the materials they are using and, therefore, they will take appropriate safety measures. The Department of National Health and Welfare has launched a “Safer Arts” program aimed directly at artists, be they hobbyists or otherwise. It promotes awareness of the potentially toxic effects of chemicals through an education campaign that employs a booklet, The Safer Arts, and 10 posters on a variety of arts and crafts – sculpture, pottery, photography, painting, stained glass, and so on. There is also a poster to promote general awareness of the issue. This material is available directly to the public and complements a program of lectures and presentations aimed specifically at practitioners of each art and craft, at students and teachers in fine, applied and industrial art schools, and at teachers in the general education system. Posters and copies of the Safer Arts booklet are available free of charge from the Communications Directorate, Brooke Claxton Edifice, Tunney’s Meadow, Ottawa, Ont. KMA. This outcome could remain attributed to an inability on the part of the lecturers in educating art students at the start of semester almost good safety practices in the workshop. In some universities in Nigeria where they have, instructors are not helping matters. Most often, the instructors do not caution students about the effects of these dangerous art materials.

Another possible reason for students and lecturers not being aware may be negligence in safety practices in their at workspace that they contemplate utilizing protective equipment such as gloves and masks will block the artistic procedure. Artists regularly place themselves at danger freely because they do not grip the similar in fine fettle respect for materials as per other professionals and because the additional materials and they’re possible to stimulate them. Here is a popular credence among art students that art cannot be injurious. Art students know that chemicals remain hazardous, nonetheless, the insight is that art materials are not chemicals.

### Table 8. Association of Respondents and Awareness of Toxic and Harmful Materials.

| Respondents | Aware | Not Aware | Total |
|-------------|-------|-----------|-------|
| Students    | 19 (5.8 %) | 54 (94.2%) | 325   |
| Lecturers   | 13 (19.4%) | 80.6 (59.7%) | 67    |

Chi-Square, $\chi^2 = 13.618$, 1, $p = .000$ (Significant).

### Table 9. Association of Respondents on Attitudes on Health Hazards.

| Respondents | Aware | Not Aware | Total |
|-------------|-------|-----------|-------|
| Students    | 43 (13.2%) | 282 (86.8%) | 325   |
| Lecturers   | 20 (29.9%) | 47 (70.1%) | 67    |

Chi-Square, $\chi^2 = 11.375$, 1, $p = .001$ (Significant).
observed that changing the attitudes of university art students and lecturers on the health hazards involved in art-making would need numerous actions. These actions include the addition of health and safety of artists and their well-being in the art programme/curriculum of the universities in Nigeria. Art-making materials can be hazardous, but that does not mean you cannot work with them. Painting, drawing, photography, ceramics, lithography, and sculpture materials are more harmful to student artists. Chemicals, compacted gases, machines, and galvanizing hazards stand likewise the maximum common wellbeing and safety risks associated with the fine and applied arts.

Precautions

Art schools in Nigeria should have health and safety policy, a safety manual and studio regulations. Safety is the responsibility of every art lecturer and student in the school. The manual will provide basic information on art materials use, equipment/machinery, safe practices, and procedures in all the art schools. Basic preventive measures include keeping containers of paint and solvents closed except when they are in use, storing materials safely, should ensure proper ventilation, they should never point brushes with their lips or hold the handles with their teeth, they should avoid skin contact with solvents, wear protective clothing such as overalls and gloves. Other measures include non-eating of food and drinks in the studio, and they should always dispose of waste solvents, paints and other materials into designated hazardous flammable waste receptacles.

Conclusions and Recommendations

The study concludes by highlighting that art lecturers and students need to mark a countless growth in their thought of art hazards and they need to take concern for their wellbeing in their art-making, at minimum to the extent they are aware of the problem. Awareness is importantly aimed at controlling hazards in art-making. Art lecturers and student artists could be safer by educating them on the awareness of health hazards involved in art-making. We strongly endorse that art-safety courses turn out to be an essential portion of the core curriculum of any program that provides education in the arts. Art lecturers and art students must trail healthiness education without having somebody impose it on them. The art students and lecturers had to attend extensive training on the new safety procedures in their art-making.

Awareness of potential hazards combined with proper safety procedures can reduce accidents and injuries meaningfully. It is not possible to detail all the risks involved in art-making; however, it is possible to foresee and implement controls for hazards by carefully planning an art project.

We exceedingly recommended that entirely art programs focus to review by expert industrial hygienists to identify the techniques, tools, and materials used by the artists. By being informed of the hazards present in art studios, receiving training on techniques and required personal protective equipment, and having an orientation to equipment and tools used in the various studios allows one to have a thorough understanding of the steps taken to create an artwork safely. A small amount of time spent pre-planning an artwork is a valuable exercise to prevent accidents. Inappropriate use of equipment, poor work practices, incorrect handling, storage, and disposal of hazardous materials can have horrible consequences on one’s health and safety, and this can lead to regulatory penalties. Always ask questions and be sure you understand what you are doing before beginning your project. Nigerian art schools neglect this part of art materials education for too long. Even the National University Commission (NUC) does not include studio practice as one of the hazardous areas in their policy. We suggest that it is time they should take it seriously and make sure that they include it in their policy and pay necessary hazard allowances to the lecturers and other staff involved in art-making.

Data Availability

The data set we generated during and/or analyzed during the current study are not publicly available due to confidentiality issues but are available from the corresponding author on request.

Author Contributions

All the authors contributed to the study formation and design. Chris Ibenegbu performed material preparation, data collection, and analysis. Chris Ibenegbu wrote the first draft of the manuscript and all authors commented on the former versions of the manuscript. All the authors read and approved the final manuscript.

Consent

We obtained consent from all individual participants included in the study.

Declaration of Conflicting Interests

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**Ethical Approval**

We obtained both oral and written consent from the participants. The parents or guardian of the students below the age of 18 years provided both oral and written consent on their behalf. Participation was voluntary. The Local Institutional Review Board (Postgraduate Studies Review Board), University of Nigeria, Nsukka approved the study procedure. Before participants’ verbal consent, we informed them about the purpose of the study and we made them understand that participation was voluntary and refusal to participate in the study attracts no penalty. We assured the study respondents of confidentiality and we removed personal identifiers in the summary data to ensure confidentiality. Though we distributed questionnaires to randomly selected respondents in the universities, it bears only codes and administered at various times and shifts work duties to guarantee confidentiality. Also, only the research team members had access to electronic data, encrypted and stored only in the external hard drive of the principal investigator. Besides, the data collection was anonymous.

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