

CADUCEUS OR ROD OF ASCLEPIUS? EXPLORING LOGOS OF UNIVERSITY TEACHING HOSPITALS IN NIGERIA

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Abstract

Background: Historically, the Rod of Asclepius is considered as the correct symbol of Medicine. Unfortunately, many medical/health institutions in the world have erroneously interchanged the Rod of Asclepius symbol with erroneous symbols (e.g. Caduceus) to depict Medicine. This study aims to assess the official logos (i.e. institutional symbols) of university teaching hospitals in Nigeria and determine if these logos actually depict the true symbol of Medicine.

Methods: This study was a cross-sectional online survey of teaching hospitals in Nigeria on their official logos. A total of 40,556 operating hospitals and clinics in Nigeria were identified. After systematic screening, a total of 35 hospitals were identified as university teaching hospitals and used for the survey. Official information about the geopolitical zone, ownership and official logo of the selected hospitals was obtained (via online and offline search). Data collected was analysed using SPSS version 22 software.

Results: Out of the 35 surveyed university teaching hospitals, only 7 did not have snake(s) as part of their official logo. However, out of the remaining 28 hospitals that have snake(s) as part of their official logos, only 57.1% (16/28) of them have only one snake in their logo. Exactly half of the surveyed hospitals having logos with two entwined snakes (i.e. Caduceus) were owned by the federal government. Bivariate analysis showed that there exists statistically significant relationship between the geopolitical zone where a hospital is situated and the number of entwined snakes indicated in their official logo (p-value=0.034).

Conclusion: This study shows that the correct symbol of Medicine is not universally indicated in the official logos of the university teaching hospitals in Nigeria.

Keywords

Logo • emblem • symbol • Rod of Asclepius • Caduceus • tertiary • hospitals • Nigeria

Introduction

The significance of symbols in diverse spheres of life is very huge [1]. The Mariam Webster Dictionary defines symbols as “something that stands for or suggests something else by reason of relationship, association, convention, or accidental resemblance”. Symbols are crucial in establishing historical facts and cultural heritage. In the field of Medicine, symbols have found significant use in medical and health professions. One such is the symbol representing the medical profession, which is the symbol depicting an entwined snake and a staff – the Rod of Asclepius (Figure 1) [2-5].

The Rod of Asclepius is widely considered as the historically true symbol depicting Medicine [4]. However, there seems to be some variance in the recognition and the use of this medical symbol as symbols depicting two entwined snake

around a winged staff are sometimes used to depict Medicine in some arenas [6-10]. The symbol depicting two entwined snake around a winged staff is referred to as the Caduceus (Figure 2) [11-13].

Historically, Asclepius was a demigod, the son of god Apollo, who lived in the latter part of the 8th century BC, who heals people from their sicknesses [14-16]. By 500 BC, the acceptance of Asclepius as a demigod of healing was more established among physician-healers in Ancient Greece, making these physician-healers to be regarded as Asclepiads – the disciples of Asclepius [15]. Traditionally, in the 4th century BC, this demigod (Asclepius) is being depicted by “a bearded man wearing a robe that leaves his chest uncovered and holding a staff with his sacred single serpent coiled

around it" [15]. However, during the early 4th century AD, the worship of Asclepius and the use of Asclepius depictions were suppressed by the Roman Emperor Constantine due to the recognition of Christianity as the official religion of the Roman Empire; Greek was a colony of the Roman Empire during this historical period [15]. The suppression of Asclepius depictions persisted until the 16th and 17th centuries AD, when some European medical publishers adopted that the use of Rod of Asclepius symbol as a medical symbol [15].

On the other hand, the Caduceus is a symbol depicting the Caduceus of Hermes [15]. The Caduceus of Hermes is a magical wand [15]. Hermes was a god and the son of Zeus and Maia – Olympian gods [15]. Hermes is also a winged messenger god, a protector of merchants and thieves, a patron of travellers, and a conductor of the dead [15]. From the 7th century to the 17th century AD, Hermes was associated with alchemy, occultism, astrology, magic, and arts [15]. Hence, Hermes was historically considered as the patron of commerce [1, 15].

Based on the above, it is historically obvious that the Rod of Asclepius is the historically true symbol of modern Medicine that has been in existence for over two millennia [4, 15]. The Caduceus, often accepted as the current symbol of commerce, has often been deemed a misconception with its use as a medical symbol since the 19th century AD (over 200 years ago) [4, 15]. Medicine and Commerce are two different professional entities; hence there should not be inter-changeability errors in their use. A recent study conducted among medical students in a Nigerian university showed that the majority of the surveyed medical students were not aware of the historically appropriate medical symbol [1]. Also, some studies had recorded that some medical and health institutions/societies are using wrong medical symbols in their official logos; more importantly, none of these studies assessed the use of the true symbol of Medicine in medical and health institutions/societies in Nigeria [17, 18].

Hence, it becomes imperative to explore the medical symbols used in Nigerian university teaching hospitals and assess them to determine if they actually depict the historically true symbol of Medicine. Hence, we aim to conduct this study to assess the official logos (i.e. institutional symbols) of university teaching hospitals in Nigeria and determine if these logos actually depict the true symbol of Medicine.

Methods

This study was a cross-sectional survey of university teaching hospitals in Nigeria on the official logos they use; this study was also conducted under strict compliance with the 1964 Helsinki Declaration.

In the study, we first identified the list and total number of operational hospitals and clinics in Nigeria ($n=40,556$). Thereafter, we screened out all the non-tertiary care hospitals ($n=40,300$) in Nigeria from the master list (we obtained this data online from the Nigeria Health Facility Registry [date of access: December 30, 2019]) [19].

Using the following criteria, we thereafter extracted the list of all functional university teaching hospitals to be included in the study from the list of tertiary care hospitals in the country:

- Approval of the university teaching hospital by the Medical and Dental Council of Nigeria for internship training [20];
- Status of the university teaching hospital as per training of medical students, as only those university teaching hospitals that are training medical students shall be included in the study.

Based on the above criteria, only 35 university teaching hospitals were selected for the study (Figure 3). After identifying these hospitals, an exploration of the official websites of these hospitals (see table 1 for the URLs) as well as the official and public documents (hard copies) was done. From these websites and documents, we obtained information on the ownership, and geographical locations (i.e. city and geo-political zone) of the surveyed hospitals. Also, from these sources, we examined their official logos for evaluation. The logo evaluation was based on the: (1) presence or absence of a snake in the logo; (2) the number of snakes in the logo, if available.

Collected data was computed into SPSS version 22 Software for analysis. Frequency distributions of all variables were determined. Also, Chi square test was used to test for associations between relevant variables, with a p -value of <0.05 considered to be of statistical significance.

Results

Only 35 university teaching hospitals were used for this study. These 35 hospitals are spread across the 6 geopolitical zones in Nigeria (South-West zone, South-East zone, South-South zone, North-East zone, North-West zone, and North-Central zone) (Table 2).

Out of these 35 surveyed hospitals, only 7 did not have snake(s) as part of their official logo. However, out of the remaining 28 hospitals that have snake(s) as part of their official logos, only 57.1% (16/28) of them have only one snake in the logo (Table 3). Exactly half of those surveyed hospitals having logos with two entwined snakes (i.e. Caduceus) were owned by the federal government, none of the surveyed hospitals in North-West geopolitical zone had a snake in their official logo, and all the surveyed hospitals in South-South and South-East geopolitical zones had at least

one snake included in their logo. Lastly, bivariate analysis showed that there exists statistically significant relationship between the geopolitical zone where a hospital is situated and the number of entwined snakes indicated in their official logo (p -value=0.034) (Table 3).

Discussion

The issue of erroneous use of wrong medical symbols by medical institutions is not a new thing [21]. Even among medical practitioners and trainees, many of them are yet to know the correct symbol of Medicine [17, 18, 22, 23]. Historically, the correct medical symbol is the Rod of Asclepius [4, 5]. In a study surveying schools of health profession sciences in Canada, USA, and Puerto Rico, it was found that incorrect medical symbols were commonly used in their logos [17]. Also, in another similar survey solely conducted in the USA, it was revealed that 62% of health profession associations used the Caduceus symbol – a wrong medical symbol [18]. However, after extensive literature search, we found that no single published study had ever been conducted to assess the official medical symbols/logos used in Nigerian medical institutions. Due to this gap in knowledge, this scientific study was conducted to assess the use of the correct symbol of Medicine by Nigeria medical institutions, using university teaching hospitals as a case study. The rationale for selecting university teaching hospitals for this survey is because they are: tertiary institutions; in the highest level of medical care; and also the highest citadel of learning for medical practitioners in Nigeria. However, there are more than 35 teaching hospitals in Nigeria, but due to the scope of the study, as this study focuses on university teaching hospitals where medical students in Nigeria are trained; hence only these selected hospitals were included in this study.

It is also noteworthy that we did not conduct this study with the aim of belittling the institutions' choice of use of Caduceus symbol (although a wrong medical symbol [21, 24]) in their

logo, but rather to awaken the medical community to the use of the appropriate medical symbol and claim back a part of the beautiful heritage and legacy of medicine [23].

In this study, we recorded very interesting findings. We found that as high as 34.3% of the surveyed hospitals have Caduceus as part of their official institutional logo. As aforementioned, this issue of erroneous inter-changeability is a global phenomenon [1-14, 18, 19, 21-26]. We also found that these errors cut across all levels of ownership (i.e. private, state and federal) and geopolitical zones in Nigeria, with North-West zone being the only exemption.

Based on the aforementioned, it becomes imperative to re-awaken the medical community on the recognition and use of the historically correct symbol of medicine. This issue is of serious concern because new generations of medical professionals and trainees are emerging and they are predisposed to erroneously adopting the use of wrong medical symbols [1]. Based on the available studies, majority of health professionals and medical trainees lacked adequate knowledge on the historically correct medical symbol [17, 22]; hence the need for educational interventions as regards this issue.

However, this study has its limitations. This study surveyed university teaching hospitals in Nigeria only; hence, it will be difficult to make generalizations based on the existing data as hospitals in lower levels and in other countries were excluded in the study.

In conclusion, this study shows that the correct symbol of Medicine is not universally used by the university teaching hospitals in Nigeria. Hence, all the medical institutions in Nigeria using wrong medical symbol in their official logos need to take a look into this common error.

Conflict of Interest Statement

This study was self-funded. The authors of this study have no conflict of interest to declare.

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Tables

Table 1. List of the surveyed university teaching hospitals and their websites

| University Teaching Hospital | Website |
|---|---|
| South-West Geo-political Zone | |
| Lagos State University Teaching Hospital, Ikeja | https://www.lasuth.org.ng/ |
| Lagos University Teaching Hospital, Idi-Araba | https://www.luth.org.ng/ |
| Olabisi Onabanjo University Teaching Hospital, Sagamu | https://oouth.com/ |
| Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife | https://oauthc.com/ |
| University College Hospital, Ibadan | http://uch-ibadan.org.ng/ |
| Ekiti State University Teaching Hospital, Ado-Ekiti | https://eksuth.org.ng/ |
| Federal Teaching Hospital, Ido-Ekiti | https://fethi.gov.ng/ |
| Babcock University Teaching Hospital, | https://www.babcock.edu.ng/buth |
| Ladoke Akintola University Teaching Hospital, Ogbomosho/Osogbo | http://www.lautechteachinghospital.org/ |
| South-East Geo-political Zone | |
| Abia State University Teaching Hospital, Abia | Not available |
| Nnamdi Azikiwe University Teaching Hospital, Nnewi | https://nauth.org.ng/ |
| University of Nigeria Teaching Hospital, Enugu | http://www.unthenugu.com.ng/ |
| Imo State University Teaching Hospital, Orlu | Not available |
| Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Amaku | Not available |
| Madonna University Teaching Hospital, Elele | Not available |
| Alex Ekwueme Federal University Teaching Hospital, Abakaliki | http://www.aefutha.gov.ng/ |
| South-South Geo-political Zone | |
| University of Uyo Teaching Hospital, Uyo | https://www.uuthuyo.net/ |
| University of Calabar Teaching Hospital, Calabar | Not available |
| University of Benin Teaching Hospital, Benin | https://ubth.org/ |
| University of Port Harcourt Teaching Hospital, Port Harcourt | https://upthng.com/ |
| Delta State University Teaching Hospital, Oghara | https://delsuth.com.ng |
| Niger Delta University Teaching Hospital, Okolobiri | https://www.nduth.org.ng |
| Igbinedion University Teaching Hospital, Okada | Not available |
| Rivers State University Teaching Hospital | https://www.rsuth.ng/ |
| North-East Geo-political Zone | |
| University of Maiduguri Teaching Hospital, Maiduguri | https://www.umth.org.ng/ |
| Federal Teaching Hospital, Gombe | https://fthg.ng/ |
| Abubakar Tafawa Balewa University Teaching Hospital, Bauchi | https://atbuth.org.ng/ |
| North-Central Geo-political Zone | |
| University of Ilorin Teaching Hospital, Ilorin | http://uith.org/ |
| Jos University Teaching Hospital, Jos | http://www.juth.org.ng/ |
| University of Abuja Teaching Hospital, Gwagwalada | https://uath.gov.ng/ |
| Benue State University Teaching Hospital, Markurdi | http://www.bsuth.org.ng/ |
| Bingham University Teaching Hospital, Jos | http://www.bhuth.org.ng/ |
| North-West Geo-political Zone | |
| Aminu Kano Teaching hospital, Kano | http://akth.org.ng/ |
| Ahmadu Bello University Teaching Hospital, Zaria | http://abuth.gov.ng/ |
| Usmanu Danfodiyo University Teaching Hospital, Sokoto | http://www.uduth.org.ng/ |

Table 2. The surveyed university teaching hospitals in Nigeria

| University Teaching Hospital | n | Ownership |
|---|---|-----------|
| South-West Geo-political Zone | | |
| Lagos State University Teaching Hospital, Ikeja | 0 | State |
| Lagos University Teaching Hospital, Idi- Araba | 1 | Federal |
| Olabisi Onabanjo University Teaching Hospital, Sagamu | 1 | Federal |
| Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife | 1 | Federal |
| University College Hospital, Ibadan | 0 | Federal |
| Ekiti State University Teaching Hospital, Ado-Ekiti | 2 | State |
| Federal Teaching Hospital, Ido-Ekiti | 2 | Federal |
| Babcock University Teaching Hospital, | 1 | Private |
| Ladoke Akintola University Teaching Hospital, Ogbomosho/Osogbo | 1 | State |
| South-East Geo-political Zone | | |
| Abia State University Teaching Hospital, Abia | 2 | State |
| Nnamdi Azikiwe University Teaching Hospital, Nnewi | 2 | Federal |
| University of Nigeria Teaching Hospital, Enugu | 2 | Federal |
| Imo State University Teaching Hospital, Orlu | 2 | State |
| Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Amaku | 1 | State |
| Madonna University Teaching Hospital, Elele | 1 | Federal |
| Alex Ekwueme Federal University Teaching Hospital, Abakaliki | 1 | Federal |
| South-South Geo-political Zone | | |
| University of Uyo Teaching Hospital, Uyo | 1 | Federal |
| University of Calabar Teaching Hospital, Calabar | 2 | Federal |
| University of Benin Teaching Hospital, Benin | 2 | Federal |
| University of Port Harcourt Teaching Hospital, Port Harcourt | 1 | Federal |
| Delta State University Teaching Hospital, Oghara | 2 | State |
| Niger Delta University Teaching Hospital, Okolobiri | 1 | Federal |
| Igbinedion University Teaching Hospital, Okada | 2 | Private |
| Rivers State University Teaching Hospital | 1 | State |
| North-East Geo-political Zone | | |
| University of Maiduguri Teaching Hospital, Maiduguri | 1 | Federal |
| Federal Teaching Hospital, Gombe | 1 | State |
| Abubakar Tafawa Balewa University Teaching Hospital, Bauchi | 2 | Federal |
| North-Central Geo-political Zone | | |
| University of Ilorin Teaching Hospital, Ilorin | 0 | Federal |
| Jos University Teaching Hospital, Jos | 1 | Federal |
| University of Abuja Teaching Hospital, Gwagwalada | 0 | Federal |
| Benue State University Teaching Hospital, Markurdi | 1 | State |
| Bingham University Teaching Hospital, Jos | 2 | Private |
| North-West Geo-political Zone | | |
| Aminu Kano Teaching hospital, Kano | 0 | Federal |
| Ahmadu Bello University Teaching Hospital, Zaria | 0 | Federal |
| Usmanu Danfodiyo University Teaching Hospital, Sokoto | 0 | Federal |

"n" - Number of snakes represented on logo

Table 3. Comparison between medical logos and other variables

| Variable | | Number of snakes in official institutional logo | | | p-value |
|-------------------|---------------|---|-------------------|----------------|---------|
| | | One snake (n=16) | Two snakes (n=12) | No snake (n=7) | |
| Ownership | Federal | 7 (43.6) | 6 (50.0) | 7 (100.0) | 0.154 |
| | State | 6 (37.5) | 4 (33.3) | 0 (0.0) | |
| | Private | 3 (18.8) | 2 (16.7) | 0 (0.0) | |
| Geopolitical zone | South-West | 5 (31.3) | 2 (16.7) | 2 (28.6) | 0.034 |
| | South-East | 3 (18.8) | 4 (33.3) | 0 (0.0) | |
| | South-South | 4 (25.0) | 4 (33.3) | 0 (0.0) | |
| | North-East | 2 (12.5) | 1 (8.3) | 0 (0.0) | |
| | North-Central | 2 (12.5) | 1 (8.3) | 2 (28.6) | |
| | North-West | 0 (0.0) | 0 (0.0) | 3 (42.9) | |

"n" – Total number of respondents per category

Figures

Figure 1. Rod of Asclepius (Source: https://en.wikipedia.org/wiki/File:Esclapius_stick.svg [Accessed on January 02, 2020])



Figure 2. Caduceus (Source: https://commons.wikimedia.org/wiki/Caduceus#/media/File:Caduceus_large.jpg [Accessed on January 02, 2020])



Figure 3. Diagram on data sorting

