Decolonizing Neurosurgery in Black Communities - *African Perspective* -

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Disclosures

• None
African Neurosurgery

- Most frustrating aspects of neurosurgery in the 21st Century
- African countries except the North and the South have not benefited from the progress achieved in neurosurgery during its the last 50 years

Delay related to many factors:

- Lack of financial resources and infrastructures;
- Paucity of neurosurgeons;
- Inadequate healthcare planning;
- Inadequate political, economic and social environment;
• Reports from the beginning of the 20th century indicated that only 79 (14%) of the 565 African neurosurgeons worked in SSA (ratio: 1NS per 7M)

• This limitation in workforce was highlighted as one of the major barriers to neurosurgical care.

• Neurosurgery is not a priority- it is a luxury; it is expensive and individually focused- what is a priority is Primary Health Care (PHC).

• The clinical results for neurosurgery in LMIC are uniformly POOR;

To address this issue, efforts were made to improve neurosurgery training in SSA.
STATE OF NEUROSURGERY IN AFRICA (1)

• African population: 1.4 billion (2022)
• Neurosurgeons: ~1750 neurosurgeons!

Maghreb: ~1240; SSA: 512 (238 in SA)

Egypt: > 520
Algeria: 408
Morocco: ~ 250
South Africa: 238

~ 1416 (~ 80%)

STATE OF NEUROSURGERY IN AFRICA (2)

• Some African countries do not have a single neurosurgeon;
• A majority of countries have very few neurosurgeons: e.g;
  o Nigeria: 85 neurosurgeons for 206M
  o DRC: 11 neurosurgeons for 89M
  o Uganda: 11 neurosurgeons for 41M
  o Rwanda: 6 neurosurgeons for 13M

• Socio-economic conditions
• Brain drain: training outside Africa and many neurosurgeons didn't return in their countries
RWANDA NEUROSURGERY

- Visiting NS (SA, Cuba) <2007;
- 1 CTB 2007;
- 1st Rwandese NS IN 2007;
- 1st MRI 2010;
- 2 NS in 2011/11M
- Local training: 2012
- 2022: 6 Neurosurgeons/13M
- 6 residents
2007: MY FIRST CONTACT WITH NEUROSURGERY

I WANT TO BE A NEUROSURGEON
Where to train?
How do I do it?

SWEDEN, 2007

RABAT WFNS TRAINING CENTER (2011-2016)
# Historical Vignette

**Takeoff of African Neurosurgery and the World Federation of Neurosurgical Societies Rabat Training Center Alumni**

*Claire Karekezi* and *Abdeslam El Khamlichi*

## Table 1. Current Clinical and Academic Positions of World Federation of Neurosurgical Societies Rabat Training Center Former Trainees

<table>
<thead>
<tr>
<th>Country</th>
<th>Number/Sex</th>
<th>Hired in Public Hospitals</th>
<th>University Position</th>
<th>Private/Unhired</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>3/M</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>1/M</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1/M</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DRC</td>
<td>3/M</td>
<td>2</td>
<td>-</td>
<td>1*</td>
</tr>
<tr>
<td>Guinee Conakry</td>
<td>2/M, F</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mali</td>
<td>3/M</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Mauritania</td>
<td>1/M</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Niger</td>
<td>1/M</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nigeria</td>
<td>6/M</td>
<td>6</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Republic of Congo</td>
<td>2/M</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Rwanda</td>
<td>1/F</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1/M</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Togo</td>
<td>3/M</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Uganda</td>
<td>1/M</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29 (27 M, 2 F)</strong></td>
<td><strong>23</strong></td>
<td><strong>10</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

M, male; DRC, Democratic Republic of Congo; F, female.

*Late Dr. Mudjir Didier.*
• How to adjust to a new environment— I had to learn some arabic!!!
• How to use available resources—Burr Hole trail, gigli saws, anatomic landmarks and good planning (ICU beds, blood…)
• Surviving crazy calls and have the right call for critical cases
• Journal Club, Tuesdays— constantly updating knowledge

WFNS RABAT CENTER (2011-2016)
MY OVERSEAS TRAININGS – LESSONS LEARNED

MOROCCO

ADJUSTMENT
PLANNING
SKILLS
KNOWLEDGE

USA- CANADA

GOOD ORGANIZATION
OR

TEAM WORK
MENTORS

Resources
About 76 African training programs that recruit more than 168 trainees each year;
22 countries have at least a training program;

**TOP COUNTRIES: Egypt, Algeria, Nigeria >10 programs each**

**COSECSA** 16 programs in 8 countries
**WACS** 17 programs in 3 countries

Average training 5 (4-7) years, no standardized training on the continent;
NEEDS OF YOUNG AFRICAN NEUROSURGEONS

Needs of Young African Neurosurgeons and Residents: A Cross-Sectional Study


April, 2021

Results: 112 respondents from 20 countries participated in this study. 98 (87.5%) were male, 63 (56.3%) were from sub-Saharan Africa, and 52 (46.4%) were residents. 39 (34.8%) had regular journal club sessions at their hospital, 100 (89.3%) did not have access to cadaver dissection labs, and 62 (55.4%) had never attended a WFNS-endorsed conference. 67.0% of respondents reported limited research opportunities and 58.9% reported limited education opportunities. Lack of mentorship (P = 0.023, Phi = 0.26), lack of access to journals (P = 0.002, Phi = 0.332), and limited access to conferences (P = 0.019, Phi = 0.369) were associated with the country income category.

Most responders need hands-on courses as their preferred method of training (91.1%), 80 respondents preferred personal attendance (71.4%),

FIGURE 2 | Subspecialty interests.

Need for subspeciality training

<table>
<thead>
<tr>
<th>Year</th>
<th>Neurosurgeons</th>
<th>Residents</th>
<th>Training Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1</td>
<td>0</td>
<td>No local training program</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>3</td>
<td>1 local training program</td>
</tr>
<tr>
<td>2022</td>
<td>6</td>
<td>6</td>
<td>6 Residents (1 senior, 4 junior)</td>
</tr>
</tbody>
</table>
<pre><code>                      |               |           | Local programs COSCECSA |
                      |               |           | No Fellowships |
</code></pre>
DIVERSITY

“The practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc” (Google)

EQUALITY

“The state of being equal, especially in status, rights, or opportunities”

DECOLONIZATION

“The undoing of colonialism, the latter being a process where imperial nations establish and dominate foreign territories (economic, cultural and psychological aspects of the colonial experience)” Wiki
Women Neurosurgeons (US)

Gender Equity

There are very few neurosurgeons (3,600) compared with the number of physicians in other medical specialties. For example, there are more than 46,000 anesthesiologists and 25,000 orthopedists in the U.S. There are even fewer female neurosurgeons. The most recent data show there are 219 women in the United States who are board certified in neurosurgery, for about five percent of all neurosurgeons, which makes us a superminority. But this will change, as the percentage of female neurosurgery residents has increased from 12% in 2011 to 19% in 2017. This trend is and will continue to disrupt neurosurgery for the better.

"Neurosurgeons" Google pic

Nancy: First black woman to match a residency program at JHH, 2017

Dr. Timmons First woman president AANS, 2018 since 1931

"Will we have to wait another 30 years to see the next woman in this role or can we stop and recognize this is a moment to foster change?"

- Odette Harris, MD, MPH
Professor of Neurosurgery

SEXUAL EQUITY

The barriers (for women) may neither be obvious nor even acknowledged, but they exist.

Dr. James Bean, 2008
Editorial about women in neurosurgery
The progression of diversity: Black women in neurosurgery

Jean-Paul Bryant, MSc, Diana I. Nwokoye, MS, MaKayla F. Cox, and Nnenna S. Mbabuike, MD

Timeline displaying historical breakthroughs of Black women in medicine in the US.38–41 FACS = Fellow of the American College of Surgeons.
First African American female tenured professor of neurosurgery in the United States in 2018

**RACIAL DIVERSITY IN NEUROSURGERY**

Dr. OdeXe Harris

First African-American certified by the American Board of Neurological Surgery on **October 22, 1953**

Dr. Clarence Greene

**First** African-American woman certified by the American Board of Neurological Surgery, **1984**

Dr. Alexa Canady

Dr. Odette Harris

First African American female tenured professor of neurosurgery in the United States in **2018**
Dr. Latunde Odeku
First African Neurosurgeon to be trained in the US University of Michigan (1961)
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Violence</td>
<td>Structural violence refers to harm that comes to people who, by virtue of social structures, governments, economies, religions, laws or policies, face significant barriers to having their basic needs met. Examples of these barriers include institutional or structural racism, elitism, ethnocentrism or nationalism [93]. It is therefore distinguished from other forms of violence by (1) the relative invisibility of its source and (2) the absence of one or more identifiable aggressor(s).</td>
</tr>
<tr>
<td>Structural Racism</td>
<td>Structural racism refers to legislation, policies and societal norms that are based on facilitating economic advantage and prosperity for members of a favoured race, such as people of “fair” or “lighter” skin colour who appear to descend from Western Europe, while codifying barriers to prosperity and access for people of darker skin colour who appear to descend from Sub-Saharan Africa [11,94].</td>
</tr>
<tr>
<td>Anti-Racism</td>
<td>As the term implies, anti-racism refers to approaches that expose discriminatory perspectives, policies, practices and behaviours that are based on racial differences. Anti-racist approaches advance health equity by prioritizing solutions that favour groups of people who suffer most because of their racial background or identity [18].</td>
</tr>
<tr>
<td>Conscientization and Critical Consciousness</td>
<td>The related terms “conscientization” and “critical consciousness” are concepts from the field of adult education advanced by the late Brazilian philosopher and educator, Paulo Freire, in Pedagogy of the Oppressed, and related work on transformative education. Critical consciousness refers to a reflective awareness of the differential power dynamics and privileges that underlie societal inequities [95] The development of this form of awareness is a process that Freire calls, “conscientization,” and is distinguished as an approach to education that liberates participants in the educational process rather than perpetuating the “oppressor/oppressed” dichotomy in traditional forms of education [14].</td>
</tr>
</tbody>
</table>
History of African women in neurosurgery

Claire Karekezi, MD; Nqobile Thango, MD; Salamat Ahuoiza Aliu-Ibrahim, MD; Hajar Bechri, MD; Espérance Maman You Broalet, MD; Mouna Bougrine, MD; Jebet Beverly Cheserem, MD; Maguette Mbaye, MD; Zarina Ali Shabhay, MD; Nabila Tighilt, MD; Souad Bakhti, MD; and Najia El Abbadi, MD

![Map of Africa showing the number of female neurosurgeons by region](image)

**FIG. 1.** Map of Africa demonstrating the number of qualified female neurosurgeons classified according to regions.
Algeria: 135WOMEN/273MEN
Ghana: 1 female resident / 14 neurosurgeons
Senegal: 4 females ns, 13 female residents
Sudan: 12 female ns, several female residents
Madagascar: 1 female ns/ 06 neurosurgeons
Nigeria: 5 female ns/ 80 neurosurgeons
Rwanda: 1 female ns / 06 neurosurgeons
Tanzania: 4 female ns / 04 neurosurgeons
DRC : 1 female ns/11 neurosurgeons

FIG. 2. Bar graph comparing the number of male and female neurosurgeons in selected African countries.
AWIN PIONEERS

FAIZA LALAM in 1977

FIRST FEMALE NEUROSURGEONS

Faiza LALAM, Algeria, 1977
Fatem ABID, Tunisia
Minette du Preez, SA
Djamila Kafoufi Benderbous, Egypt
Broalet Esperance, Ivory cost
Mame Salimata Diene, Senegal
Aminath kelani, Niger
Salamat Ahuoiza Aliu Ibrahim, Nigeria
Susan Kalanja, Sylvia Shitsama, Kenya
Diawara Seylan, Guinea Conakry
Claire Karekezi, Rwanda
Juliet Sekabunga, Uganda
Yordanos Ashagre, Ethiopia
Kestia Rakotovao, Madagscar
Sarah Mutomb, DRC
Mireille Mouni, Cameroon
Denise Okome Mezui, Gabon

......
ACADEMIA

- 8 FULL PROFESSORS 3% of AWIN, (NA: Algeria 5, Morocco 3)
- 12 ASS. PROFESSORS 4.9% AWIN, 8/12 NA

Najia El Abbadi 1st full Prof of NS IN 1994

First ass. prof, Senegal

SSA

Broalet Esperance
Maguette Gaye
Maguette Mbaye,
Aminata Kelani
Beverly Chesserem

Newly ass. profs at CAMES

First ass. prof in anat & NS at CAMES

Senior Lecturer

Assistant Prof at Agha Khan University, Kenya
LEADERSHIP

NORTH AFRICA

02 Women president of Neurosurgical Societies November 2014 and May 2015
Both: 31 years after creation of their societies

Both also became among first female HODs

SANC, 2014
SMNC, 2015

AWIN Chair
Young CAANS
AWIN

Nqobile Thango
Beverly Chesserem