



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;





UNEQUAL DISTRIBUTION

| | Population in Million | Neurosurgeons | Ratio |
|-------------------|-----------------------|----------------|--------------------|
| Africa | 800 | 565 | 1/1.416.666 |
| S. Africa | 45 | 86 | 1/405.405 |
| N. Africa | 140 | 400 | 1/380.658 |
| SS. Africa | 615 | 79: 14% | 1/7.784.810 |

El Khamlichi A. African neurosurgery part II: current state and future prospects. *Surg Neurol.* 1998 Mar; 49(3):342-7. **1998**

| | Population in Million | Neurosurgeons | Ratio |
|-------------------|-----------------------|-----------------|--------------------|
| Africa | 1200 | 1727 | 1/700.000 |
| S. Africa | 55 | 171 | 1/320.000 |
| N. Africa | 181 | 1187 | 1/131.000 |
| SS. Africa | 964 | 369: 21% | 1/2.600.000 |

• **WHO recommended ratio: 1: 100. 000** 2016 •

“The impact of African-trained neurosurgeons on sub-Saharan Africa” **Karekezi et al**

To address this issue, efforts were made to improve **neurosurgery training** in SSA.

- 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**;

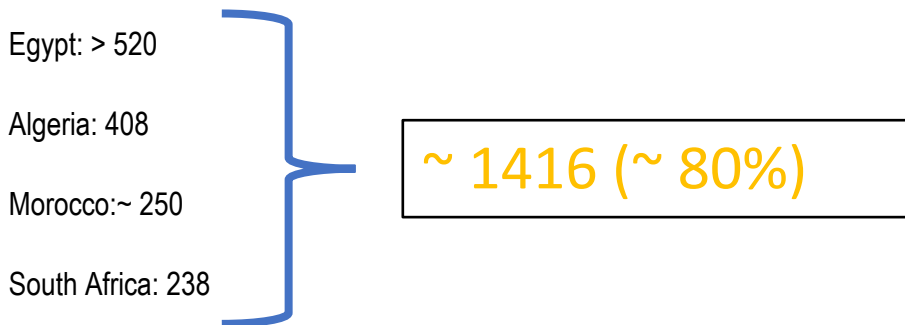
STATE OF NEUROSURGERY IN AFRICA (1)

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

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

Emerging Trends in the Neurosurgical Workforce of Low- and Middle-Income Countries: A Cross-Sectional Study

Ulrick Sidney Kanmounye ^{1, 2, 3, 4}, Jean Wilguens Lartigue ², Samantha Sadler ^{1, 2}, Ho Kei Yuki Ip ^{1, 3}, Jacquelyn Corley ^{1, 4}, Miguel Angel Arraez ⁵, Kee Park ¹



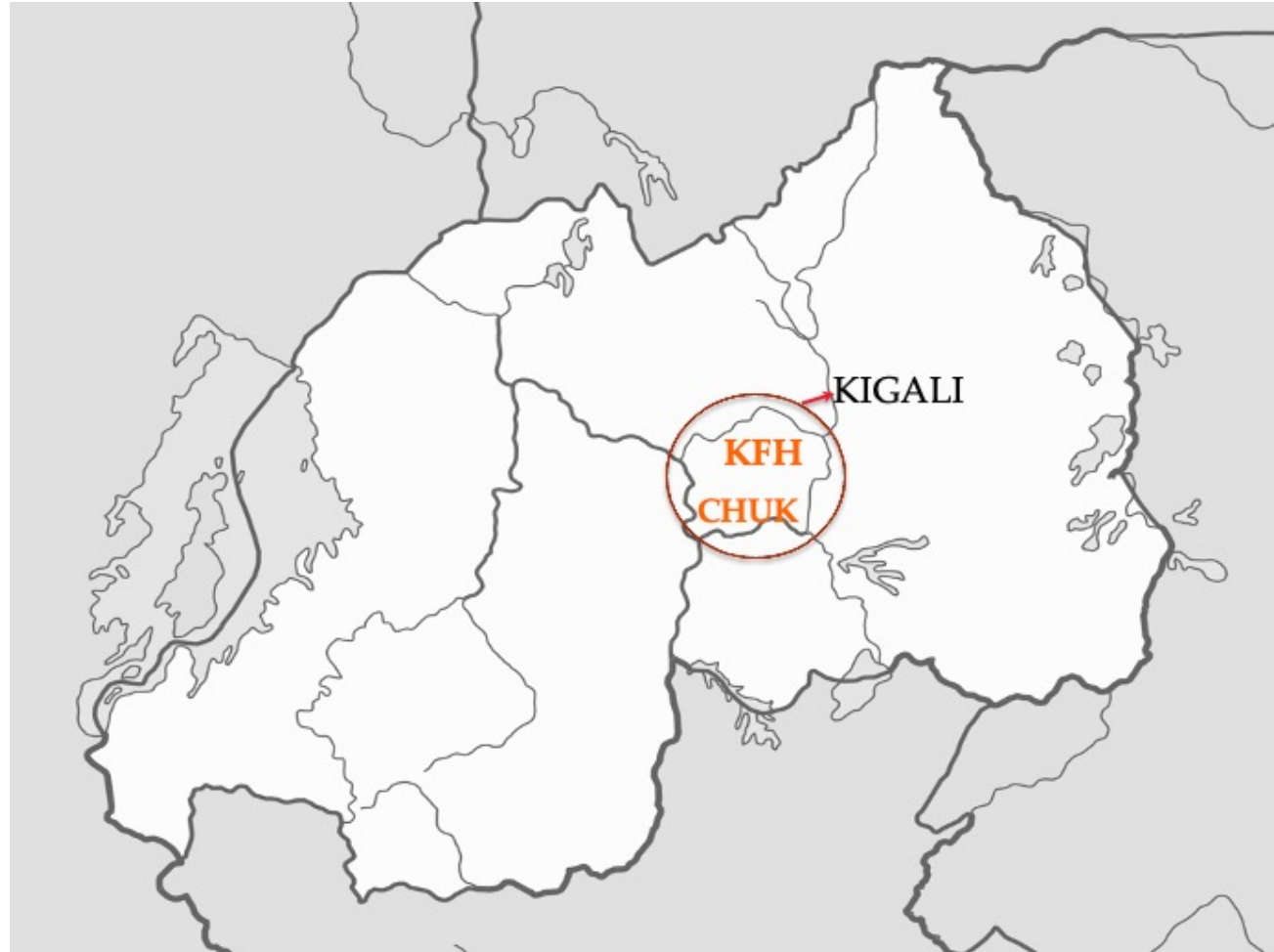
<https://www.wfns.org/menu/61/global-neurosurgical-workforce-map>

STATE OF NEUROSURGERY IN AFRICA (2)

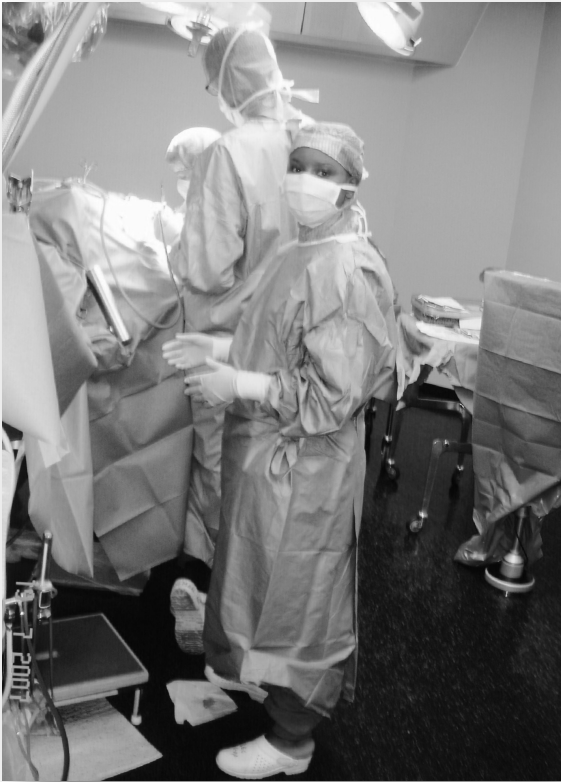
- Some African countries do not have a single neurosurgeon;
- A majority of countries have very few neurosurgeons: e.g;
 - Nigeria: 85 neurosurgeons for 206M
 - DRC: 11 neurosurgeons for 89M
 - Uganda: 11 neurosurgeons for 41M
 - Rwanda: 6 neurosurgeons for 13M
- Socio-economic conditions
- Brain drain: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



SWEDEN, 2007



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



RABAT WFNS TRAINING CENTER (2011-2016)



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

Claire Karekezi¹ and Abdeslam El Khamlichi²

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

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

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

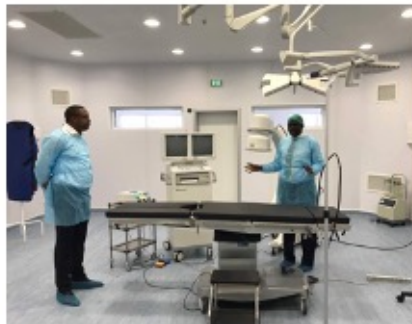
ADJUSTMENT
PLANNING
SKILLS
KNOWLEGDE



GIGLI SAW



BURR HOLE
TRAIL

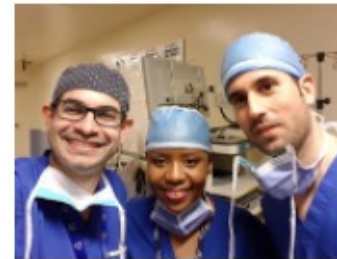


USA- CANADA

GOOD ORGANIZATION



OR



TEAM WORK



MENTORS

Resources



NEUROSURGERY EDUCATION IN AFRICA

LITERATURE REVIEW

 Check for updates

State of Neurosurgical Education in Africa: A Narrative Review

Olaoluwa Ezekiel Dada^{1,2}, Claire Karekezi³, Celestin Bilong Mbangtang^{1,4}, Edwin Samwel Chellunga^{1,5}, Thioub Mbaye⁶, Landry Konan⁷, Nourou Dine Adeniran Bankole^{1,8}, Katenga Dieu Merci Kabulo^{1,9}, Yao Christian Hugues Dokponou^{1,8}, Nathalie Christelle Ghomsi^{1,7}, Ahmed Negida¹⁰, Stéphane Nguembu¹, Nqobile Thango¹¹, Beverly Cheserem¹², Larrey Kasereka Kamabu¹³, Andrew F. Alalade¹⁴, Ignatius Esene¹⁵, Ulrick Sidney Kanmounye¹



May, 2021

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

Ulrick S. **Kanmounye**¹, Faith C. **Robertson**², Nqobile S. **Thango**³, Alvin Nah **Doe**⁴, Nourou Dine Adeniran **Bankole**⁵, Pape Aicha **Ginette**⁶, Solomon **Ondoma**⁷, James A. **Balogun**⁸, Isabella **Opoku**⁹, Luxwell **Jokonya**¹⁰, Thioub **Mbaye**¹¹, Zarina A. **Shabhay**¹², Ahmed M. **Ashour**¹³, Ana Cristina Veiga **Silva**¹⁴, Beverly **Cheserem**¹⁵, Claire **Karekezi**¹⁶, Fahd Derkaoui **Hassani**¹⁷, Nesrine **Mentri**¹⁸, Tsegazeab **Laeke**¹⁹, Abenezzer Tirsit **Aklilu**¹⁹, Samuila **Sanoussi**²⁰, Aaron **Musara**¹⁰, Jeff **Ntalaja**²¹, Peter **Ssenyonga**²², Souad **Bakhti**²³, Najia **El Abbadi**¹⁷, Muhammad Raji **Mahmud**²⁴, Nasser M. F. **El-Ghandour**²⁵, Amro **Al-Habib**²⁶, Angelos G. **Kollias**²⁷, Franco **Servadei**²⁸, Graham **Fieggen**²⁹, Mahmood **Qureshi**¹⁵, Ignatius **Esene**^{30*}, **CAANS Young Neurosurgeons Committee and WFNS Young**

OPEN ACCESS

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in Surgery
Univ
in Surgery
da

Reviewed by:
Brandon Rocque,
University of Alabama Medical Center,

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.

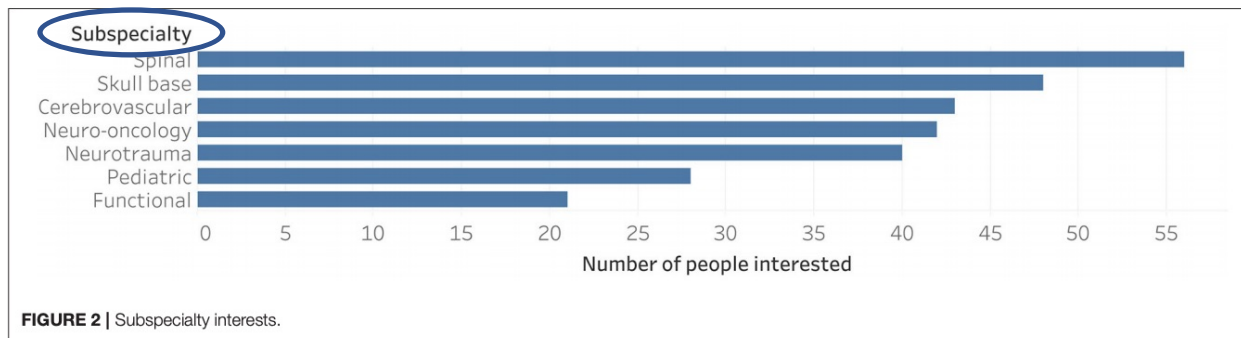


FIGURE 2 | Subspecialty interests.

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

Need for subspecialty training

<https://doi:10.3389/fsurg.2021.647279>

RWANDA NEUROSURGICAL EDUCATION

2007

- 1 Neurosurgeon
- 0 Residents
- No local training program

2013

- 2 Neurosurgeon
- 3 Residents
- 1 local training program

2022

- 6 Neurosurgeons
- 6 Residents (1senior, 4 junior)
- Local programs COSCECSA
- No Fellowships

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*

GENDER EQUITY



“Neurosurgeons” Google pic

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.

WOMEN NEUROSURGEONS (US)

INEQUALITY REDUX

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

DR. JAMES BEAN, 2008
Editorial about women in neurosurgery

WHAT'S THE ISSUE?

- Unconscious bias
- Harassment
- Increased home and family responsibilities
- Lack of mentoring and role models
- Inequality in salaries and academic promotion

2018

TRICKLE-DOWN ACADEMICS

WOMEN MAKE UP:



FEMALE TRAINEES IN NEUROSURGICAL PROGRAMS

- However the road to becoming a successful Neurosurgeon is long:
High school **4 years+** College **4 years+** Medical school: **4 years+** Neurosurgery residency (**6-7 years**)+Fellowship (**1-2years**) → a total of: **20-21years**
Then carrier pathways (Academic, private practice,..)

"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

Photo courtesy of Stanfo



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

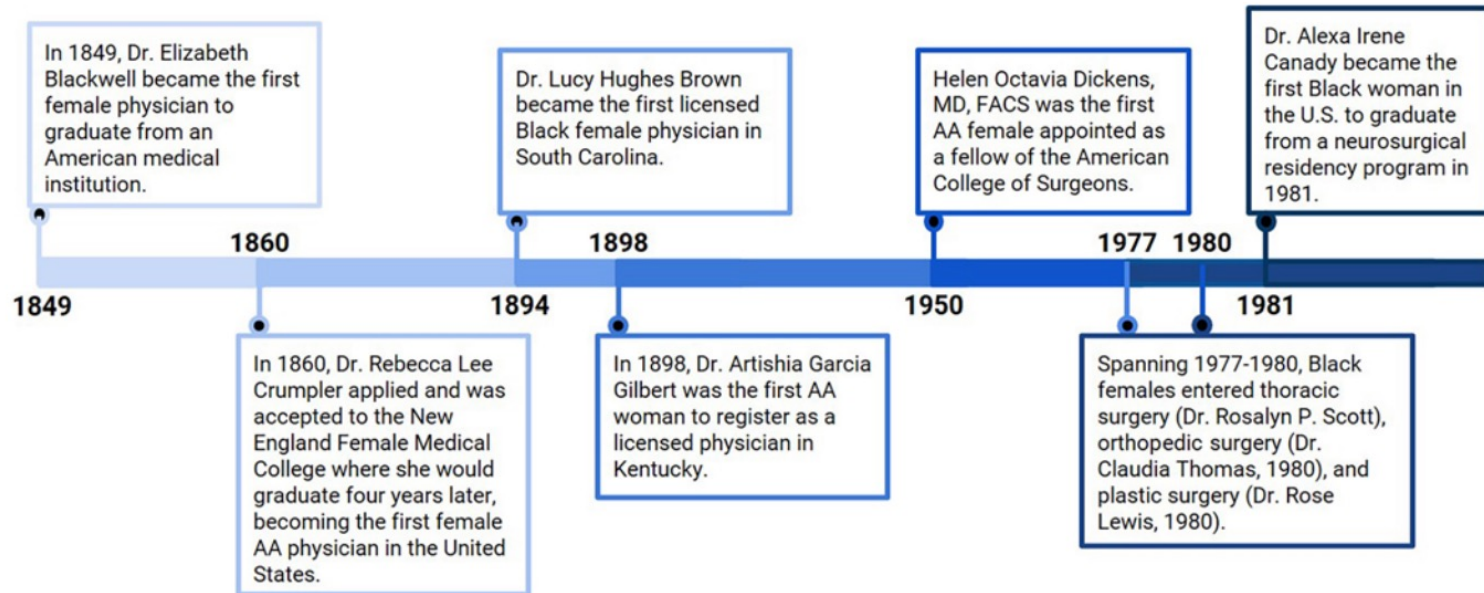


Dr Timmons First woman president AANS, 2018 since 1931

The progression of diversity: Black women in neurosurgery

Jean-Paul Bryant, MSc,¹ Diana I. Nwokoye, MS,² MaKayla F. Cox,³ and Nnenna S. Mbabuike, MD⁴

Bryant et al.



Timeline displaying historical breakthroughs of Black women in medicine in the US.^{38–41} FACS = Fellow of the American College of Surgeons.

RACIAL DIVERSITY IN NEUROSURGERY



Dr. Clarence Greene

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



Dr. Alexa Canady

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



Dr. Odette Harris

First African American female tenured professor of neurosurgery in the United States in **2018**



1 Photograph of E. Latunde Odeku, M.D., F.A.C.S.

Dr. Latunde Odeku

First African
Neurosurgeon to be
trained in the US
University of
Michigan (1961)



“...enriching the equity and integrity of
neurosurgical care”



Diversity

Welcome to the Diversity Page of the AANS. We are the faces of US neurosurgery and are working to ensure a diverse profession with equal opportunities for all trainees and neurosurgeons. Please stay tuned as we highlight new stories over the coming months.

We are pleased to present the 3rd edition of, "So You Want To Be A Neurosurgeon". Originally developed and written by Drs. Karin Murasko and Deborah Benzi, this brochure remains a concise and relevant snapshot of the field of neurosurgery. Recent changes in the journey to neurosurgery, from application through residency, board certification, and maintenance of certification, are summarized in the 3rd edition.

The Face of Neurosurgery, 2022



DIVERSITY IN NEUROSURGERY COMMITTEE

WELCOME TO DIVERSITY IN NEUROSURGERY COMMITTEE PAGE

The Diversity in Neurosurgery Committee was created in September 2019 to address the prevailing glass ceiling in European Neurosurgery and foster an inclusive environment in which neurosurgeons from all genders, religions, sexual orientations, and backgrounds can thrive. Our goal is to identify the barriers holding individuals back in their career advancement and tackle them systematically.

The Diversity Committee has its doors open to all individuals who wish to join and contribute to the progress of our challenging profession in an equitable way.

| Term | Definition/Description |
|---|---|
| Structural Violence | 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). |
| Structural Racism | 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]. |
| Anti-Racism | 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]. |
| Conscientization and Critical Consciousness | 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]. |

History of African women in neurosurgery

Claire Karekezi, MD,¹ Nqobile Thango, MD,² Salamat Ahuoiza Aliu-Ibrahim, MD,³
Hajar Bechri, MD,⁴ Espérance Maman You Broalet, MD,⁵ Mouna Bougrine, MD,⁶
Jebet Beverly Cheserem, MD,⁷ Maguette Mbaye, MD,⁸ Zarina Ali Shabhay, MD,⁹
Nabila Tighilt, MD,¹⁰ Souad Bakhti, MD,¹⁰ and Najia El Abbadi, MD⁸

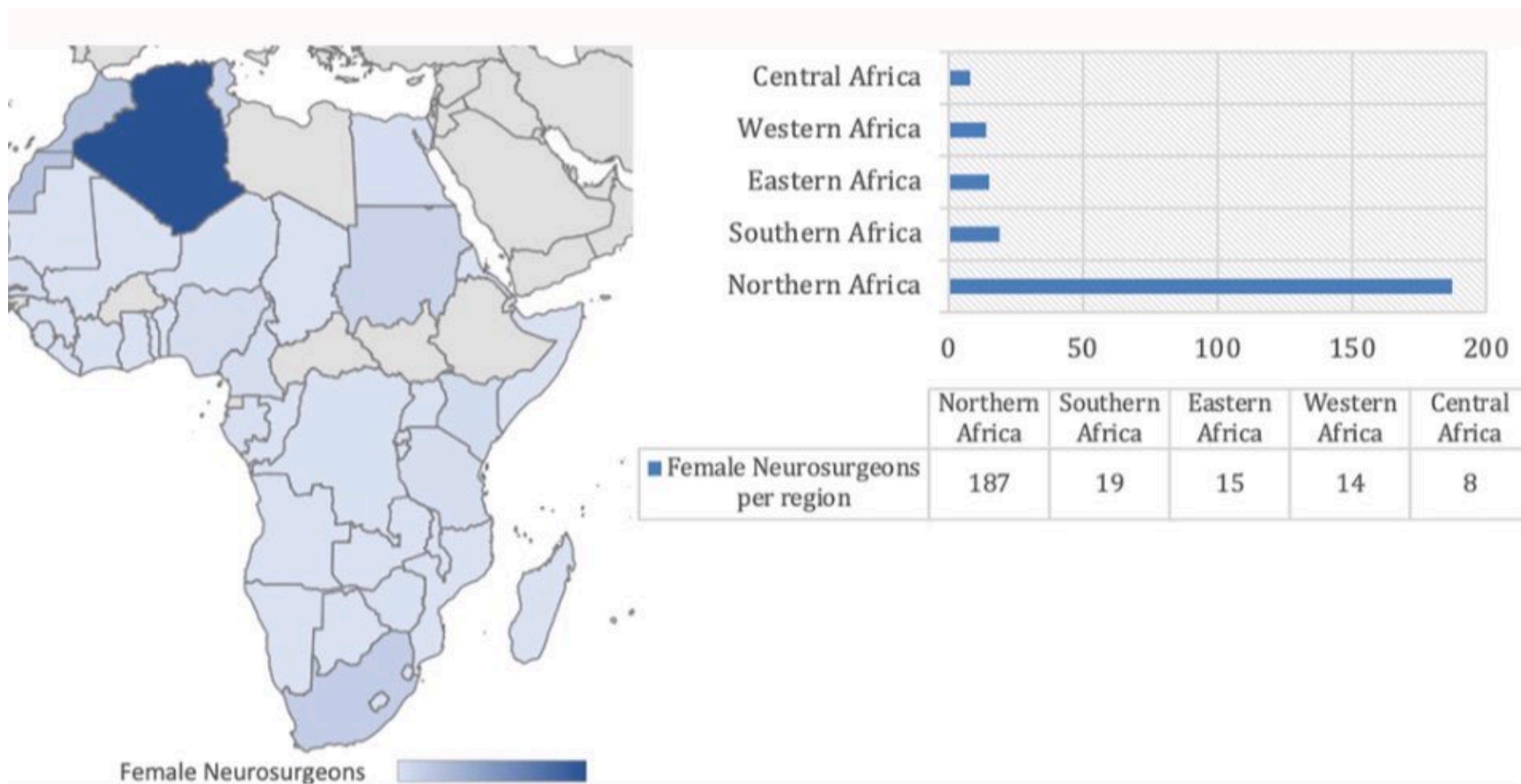


FIG. 1. Map of Africa demonstrating the number of qualified female neurosurgeons classified according to regions.

Karekezi et al.

- 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

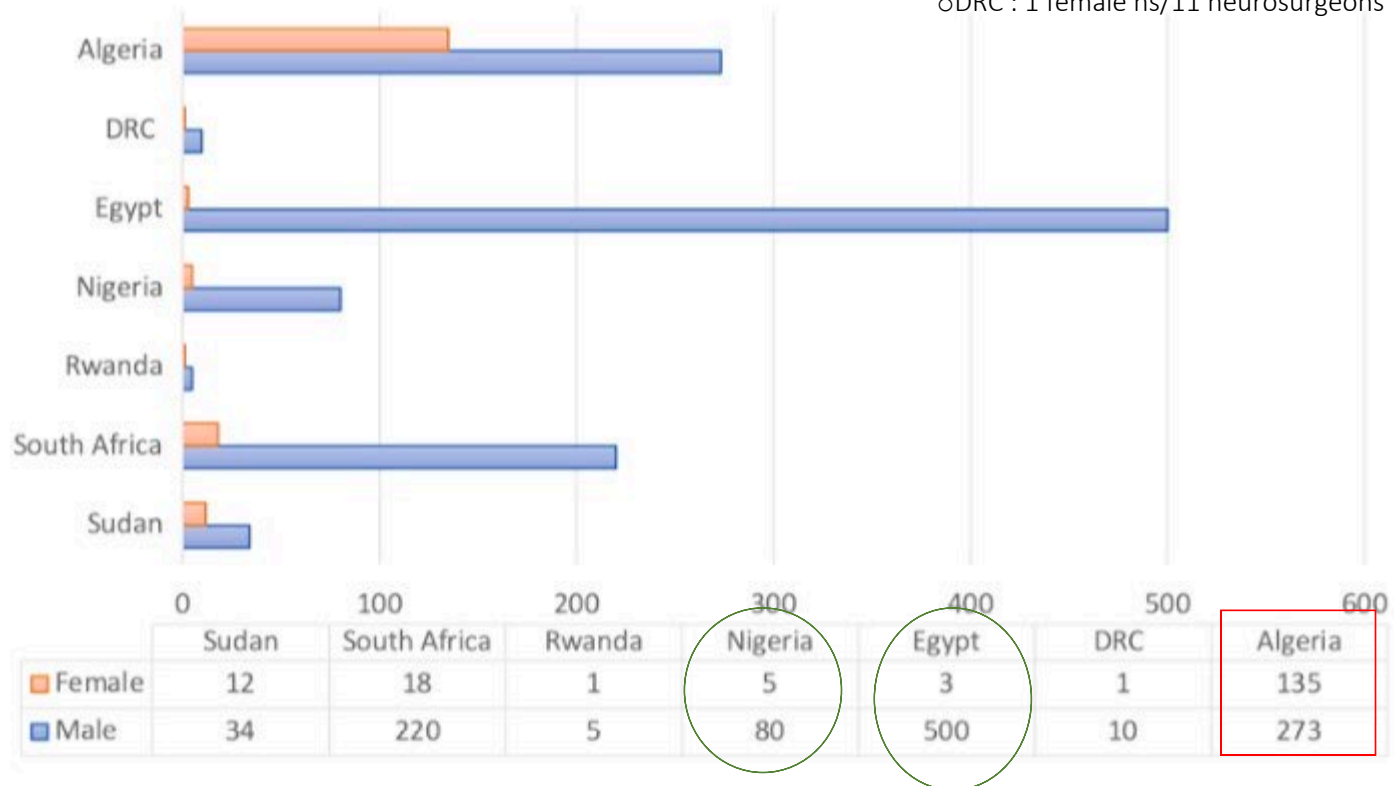


FIG. 2. Bar graph comparing the number of male and female neurosurgeons in selected African countries.

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, Madagascar
- 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



First ass. prof in anat & NS at
CAMES

SSA

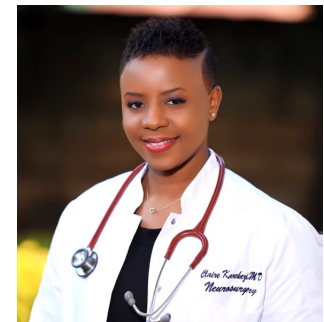
Broalet Esperance
Maguette Gaye
Maguette Mbaye,
Aminata Kelani
Beverly Chesserem



Newly ass. profs at CAMES



Assistant Prof at
Agha Khan
University, Kenya



Senior Lecturer

LEADERSHIP

NORTH AFRICA

02 Women president of
Neurosurgical Societies
November 2014 and May
2015

Both: 31 years after creation
of their societies

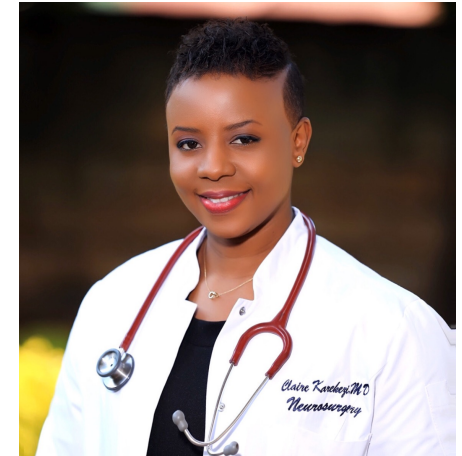
Both also became among first female
HODs



SANC, 2014



SMNC, 2015



AWIN Chair

Young CAANS
AWIN



Nqobile Thango



Beverly Chesserem