Brain Ageing and Dementia in LMICs 2022

Global Epidemiology, Genetics, Risk Factors, Biomarkers, Dementia Care, Policy

Programme & Abstract Book

Grants and Policy Workshops 5th December

6-9 December, 2022

(Safari Park Hotel, Nairobi, Kenya)

Registration:
Email: advascular@ncl.ac.uk
Website: https://conferences.ncl.ac.uk/advascular/

Brain Ageing and Dementia in LMICs 2022

"Brain Ageing and Dementia in LMICs"
Symposium, 5th (pre-conf), 6th - 9th December 2022
Safari Park Hotel, Nairobi, Kenya; Tel: (+254-20) 3633000
Email: advascular@ncl.ac.uk
Websites: Dementia in LMIC Conference 2022 | Alzheimer's Association; https://conferences.ncl.ac.uk/advascular/

SPONSORS & SUPPORTERS

ALZHEIMER'S ASSOCIATION

NIH National Institutes of Health

INTERNATIONAL BRAIN IBRO RESEARCH ORGANIZATION

UTRGV

GLOBAL BRAIN HEALTH INSTITUTE

UNIVERSITY OF GOTHENBURG
CENTRE FOR AGEING AND HEALTH - AGECAP

WFN

AMHRTF In Deus Nos Fides
AFRICA MENTAL HEALTH RESEARCH AND TRAINING FOUNDATION

AfDC African Dementia Consortium

Newcastle University

UNIVERSITY OF NAIROBI

Funding for this conference is made possible, in part, by 1 R13 AG 066391-01 from National Center of Complementary & IntegrativeHealth (NCCIH). The viewsexpressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department ofHealth and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

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Welcome!
Karibuni!

Dear Colleagues and Friends

We are delighted to welcome you to this year's exciting symposium on "Dementia in Low and Middle Income Countries (LMICs) 2022". We host this major symposium in Kenya for the fifth time! A symposium of its kind in the same venue since 2001. In recent years, several advances in epidemiological studies and developments in treatment and management of dementia have come forth. It is now time to review the progress and consider recent advances!

The three-day conference will include presentations from established and early career researchers (ECRs) on important issues related to brain ageing and health including modifiable risk factors for dementia, disability and dementia, HIV and dementia, genetics, biomarkers, cognitive testing and diagnosis, and dementia care and policy in LMICs.

The programme has engaged speakers from The Americas, Europe, Asia and Africa who have wide experience in epidemiological studies as well as bearing first hand knowledge of stroke, aphasia and dementia. The expertise of the speakers and ECRs should deliver a quality meeting of high standard and their contributions to the symposium will be invaluable.

The symposium is made possible by a grant from the NIA NIH (#1 R13 AG066391-01) and supported by Newcastle University, University of Texas Rio Grande Valley, the Alzheimer's Association, the International Brain Research Organization (IBRO), AgeCap Sweden and the Global Brain Health Institute (GBHI).

We take this opportunity to offer our sincere appreciation to several organisations for their generous sponsorship without which the symposium would not have been possible. We are indebted to numerous colleagues who have spent hours and effort in making sure this pace-setting symposium is a great success.

This symposium constitutes educational and training activities of the Alzheimer's Association's ISTAART, the International Brain Research Organisation, the Aphasia and Neurocognitive Disorders Research Group of the World Federation of Neurology, African Mental Health Research and Training Foundation and the African Dementia Consortium.

On behalf of the Symposium Convenors, Sponsors and Chairs
Gladys Maestre (USA-Venezuela)
Maria Carillo (USA)
Raj Kalaria (UK-Kenya)

USEFUL INFORMATION FOR DELEGATES

The Republic of Kenya

Country: Kenya, Republic of Kenya or Jamhuri ya Kenya lies across the equator in east-central Africa, on the coast of the Indian Ocean and has a land area of 569,250 square km. As Africa's original 'Safari Capital', Kenya still boasts some of the greatest and most varied wilderness adventures. From the great wildebeest migration in the Masai Mara to the less explored corners of Tsavo and Samburu to some of Africa's most beautiful beaches. And with the magnificent Great Rift Valley, it is one of the most spectacular countries on Earth!

City: Nairobi is the capital and largest city in Kenya and lies in the Central South of the country. In just 100 years, Nairobi has grown from a murky swamp to a booming economic capital of much of eastern and central Africa. It is a transit point for thousands of African tourists, Nairobi serves as the regional headquarters of numerous multinational companies and major aid organisations, and the global or regional headquarters of the UNEP, UN-HABITAT and UNESCO. Nairobi has one of the most pleasant climates in the world, and – in its residential suburbs at least – retains a noticeably green, pollution- free environment. The city's status as regional capital has also helped to create one of Africa's most cosmopolitan leisure spots, with some of the continent's finest hotels, restaurants, and modern and cultural entertainments.

Population: The population of close to 54,027,487 (est. in 2022) is divided into numerous ethnic groups: Kikuyu, Luhya, Luo, Kalenjin, Kamba, Kisii, Meru, other African and Asian, European, and Arab minorities. The majority of Kenyans are Christian – some 45% are Protestant and another 33% Roman Catholic – while Muslims make up about 15% of the population.

Government: In the last 18 years Kenya's government has adopted a multi-party political system, with over 25 registered political parties. There are three arms of Government: the Legislature, which enacts laws, the Executive, and the Judiciary, which acts as an arbitrator.

Languages: The official language is English, but the national spoken language is Kiswahili. There are also several other indigenous languages.

Local Time: Kenyan time is three hours ahead of the Day Light Savings Time or Greenwich Mean Time: DST + 03:00 hrs.

Visas and Destination Information

All applicants are advised to apply for eViSA prior to travel: (https://account.ecitizen.go.ke/register)

Further information on VISA Requirements is available at:
http://www.kenyahighcommission.net/visas.html#referred
All incoming visitors to Kenya (except East African Citizens) will now require a visa, irrespective of nationality. Below is a list of countries whose nationals will need to apply for entry visa one month prior to the Symposium. Cameroon; Jordan; Lebanon; Mali; Nigeria (residing outside Nigeria); Senegal; Somali and Syria

Visas on forms are downloadable from www.immigration.go.ke . All requirements for the visa application will be available on site, this being 2 passport size photos, 2 visa forms, an application letter, a fee of 20 USD and a copy of their passport.

If your country does not appear above, ***visas can be obtained at the Airport upon arrival***, however, it is advisable to obtain the visa from the nearest Kenyan Embassies/High Commissions abroad prior to departure. Where applicable, visa fees are as follows:
Transit Visa = US$25 per person
Reference Fee: US$11
Single Entry Visa= US$50 for three months (GBP ~£45)
Multiple Journey Visa= US$161

For more information on visas, please refer to the Kenyan Department of Immigration website: www.immigration.go.ke

Money
The official currency is the Kenya shilling.
Exchange rate from 08/11/2022
1 USD = 121.60 KES. . .1000 KES = 8.22 USD
1 EUR = 122.61 KES. . . 1000 KES = 8.16 EUR
1 GBP = 140.78 KES. . .1000 KES = 7.10 GBP

Banks and Exchange Bureaus: There are several banks (Barclays, Standard Chartered Banks) and exchange bureaus (Forex) at the Jomo Kenyatta International (JKI) airport, in Nairobi city, Nairobi Westlands and major cities. Money can also be cashed at several ATMs placed in foyers of major banks. The ATMs are open 24 hours. Telephone numbers can be obtained in the yellow pages or form the operator.

Climate and clothing
Kenya enjoys a tropical climate. It is hot and humid at the coast, temperate inland and very arid in the north and northeast parts of the country. The sun shines almost all year round and summer clothes are worn (see also 'Clothing'). The average annual temperature for the coastal town of Mombasa is 30-30°C maximum and 22-40°C minimum, and for the capital city, Nairobi 25-20°C maximum and 13-16°C minimum. However, it is usually cool at night and in the early morning. The rainfall is sometimes heavy and when it does rain, this often happens in the afternoons and evenings. The hottest period is from February to March and the coldest in July and August. The long rains occur from April to June and short rains from October to December. For the weather forecast click on: http://www.worldweather.org/ Early December 2016 forecast: Temp 22-27ºC with some clouds.

Clothing: Visitors should not walk in towns or public areas in their swim-wear . Nude bathing is not allowed. Visitors are advised to show respect to the local people, their culture and traditions. As for Safari-clothing the best is the 'onion philosophy', i.e. dress in layers. Safari clothing can be comfortable, light and loose, mainly cotton or linen. Light clothes are worn in the heat of the day and a sweater is added in the cool and sometimes chilly nights.

Communications
Mobile/Cell phones are very commonly used. Time cards with codes can be purchased at the Airport (just after Customs) or from supermarkets, shops and corner kiosks for use on the Safaricom, Safaricell and other systems. Time cards can be purchased in denominations of KShs 100, 200, 500, 1,000. One can also purchase the SIM cards for use locally.

Telephones: International calls can be made direct or operator-assisted by dialling 0195 and 0196. Public telephones which work with coins or with phone cards are available in the major towns. Many hotels also offer a phone service, but they usually charge much more than the providers.
Country Calling Code: The international country calling code for/to Kenya is +254.

Internet: Local connection and WI-FI is available at the venue hotel.

Transportation
Transfers from JKI Airport: Speakers and delegates can be picked up at the airport if prior arrangement has been made with the Secretariat. In the event the designated driver does not meet you on arrival, please take a reputable Taxi (see above) to the Safar Park Hotel, Nairobi. It is a 30-40 minute ride from the International Airport.

As well as Kenya's major means of transport, the narrow-gauge railway, Kenya also has numerous highways, waterways, ports and airports. The main airports are Nairobi and Mombasa. Nairobi maintains strong air links with Europe and the rest of Africa, with major airlines flying from the city's JKI Airport. The major airlines such as Kenya Airways, KLM, British Airways, SN Brussels, Emirates, etc. operate more than 15 flights daily to Europe, the Middle and the Far East.

The JKI Airport is also a hub for connections to major cities in Africa. Local airlines including Kenya Airways, AirKenya and Safari Link fly to the major capitals in Eastern and Southern Africa and the main national parks.
All public transport within Nairobi is by public bus (Kenya Bus, City Hoppa) or large minibuses (Metro Shuttles). JKI Airport +254 2 822111; Wilson Airport +254 2 501943

Taxis: Taxi cabs are available at all times of the day and night and are just a phone call away. Most of the taxi cabs can be seen parked outside hotels, restaurants, at the airport and in the city centre. If you decide to take a taxi, it is important to agree the fare before setting off as rates vary widely. Some taxi companies are Pewin cabs - www.pewin.co.ke Tel: +254 716 623919 JATCO - www.jatcotaxis.com +254 2 444 6096 or +254 722 648383. From Airport take yellow cabs. Cost approx $30 to Safari Park Hotel.

Emergency Numbers
Nairobi Hospital - +254 722 204 117; Kenyatta National Hospital- +254 722 829 500; St. John Ambulance- +254 224066; Police – 999; Fire - 999

Vaccination
It is important that you contact your local doctor regarding the recommended vaccinations and malaria risk assessment before you travel to Kenya.

Photography
Photo/image, film/video, screen capture, audio, or other recording in any medium of any of the programs, talks or data/posters/slides is prohibited, unless the presenting author grants explicit permission or there is demonstrated prior consent. Sharing your experience on social media is encouraged - however, please make sure to obtain an individual's permission prior to taking or posting a photo. Sharing images on social media that contain discernable research data (i.e., image of a poster or slide) is prohibited, unless explicit verbal or written permission is granted by the presenter of that research.

Useful Links
Kenya Tourist Board: www.magicalkenya.com; About Kenya**:** www.wikitravel.org/en/Kenya; About Nairobi**:** http://www.kenya.rcbowen.com/cities/nairobi.html; Government of Kenya: www.kenya.go.ke

SYMPOSIUM Venue: Safari Park Hotel:
Safari Park Hotel & Casino, Nairobi is located on Thika road. 15 minutes from city centre and 30-40 minutes from JKI Airport. A Five Star Deluxe of two storey buildings beautifully spread over 64 acres of landscaped gardens.
P.O. Box 45038, Nairobi 00100, Kenya
Tel: 254-020-3633000, 3633137
Fax: 254-020-3633919, 8561584
Email: sales@safariparkhotel.co.ke
Internet : http://www.safaripark-hotel.com

Dropping Zone : Revlon Professional Plaza, 2nd floor, P.O. Box 7543 Nairobi 00300
Tel : 254-020-211474/5 ; Fax : 254-020-211476

OTHER ACCOMODATION (close to Venue Hotel)
Windsor Golf Hotel & Country Club:
Windsor Hotel is a Kenyan 5 star hotel resort with a cluster of impressive Victorian style buildings. Their greatest asset is space and an awesome ambience.

Kigwa Road, off Kiambu Road, along the Northern Bypass
P. O. Box 45587 – 00100
Nairobi,
Kenya
Phone: +254 20 8647003/4
Mobile: +254 722 203 361/2/3/4, +254 733 333 217/8
Fax: +254 20 233 8093/6
E-mail: reservations@windsor.co.ke
Website: www.windsorgolfresort.com

ICIPE Guest Centre:
The Guest House is a 3-star accommodation facility, which may be booked directly. Single Room $80 per person with breakfast. ICIPE is situated opposite the Safari Park Hotel. A short taxi ride across a busy highway is the best way to get to the venue hotel. If walking across take extra care over the busy roads.
International Centre for Insect Physiology and Ecology (ICIPE)
Duduville, Kasarani
P.O. Box 30772-00100
Nairobi
Kenya
Tel: +254 (20) 8632000
Fax: +254 (20) 8632001/8632002
E-mail: icipe@icipe.org
Internet : http://www.icipe.org

Electricity
The electrical supply in Kenya is the same as in Europe: 220-240 volts at 50 cycles, mostly using 13-amp three-pin square sockets.

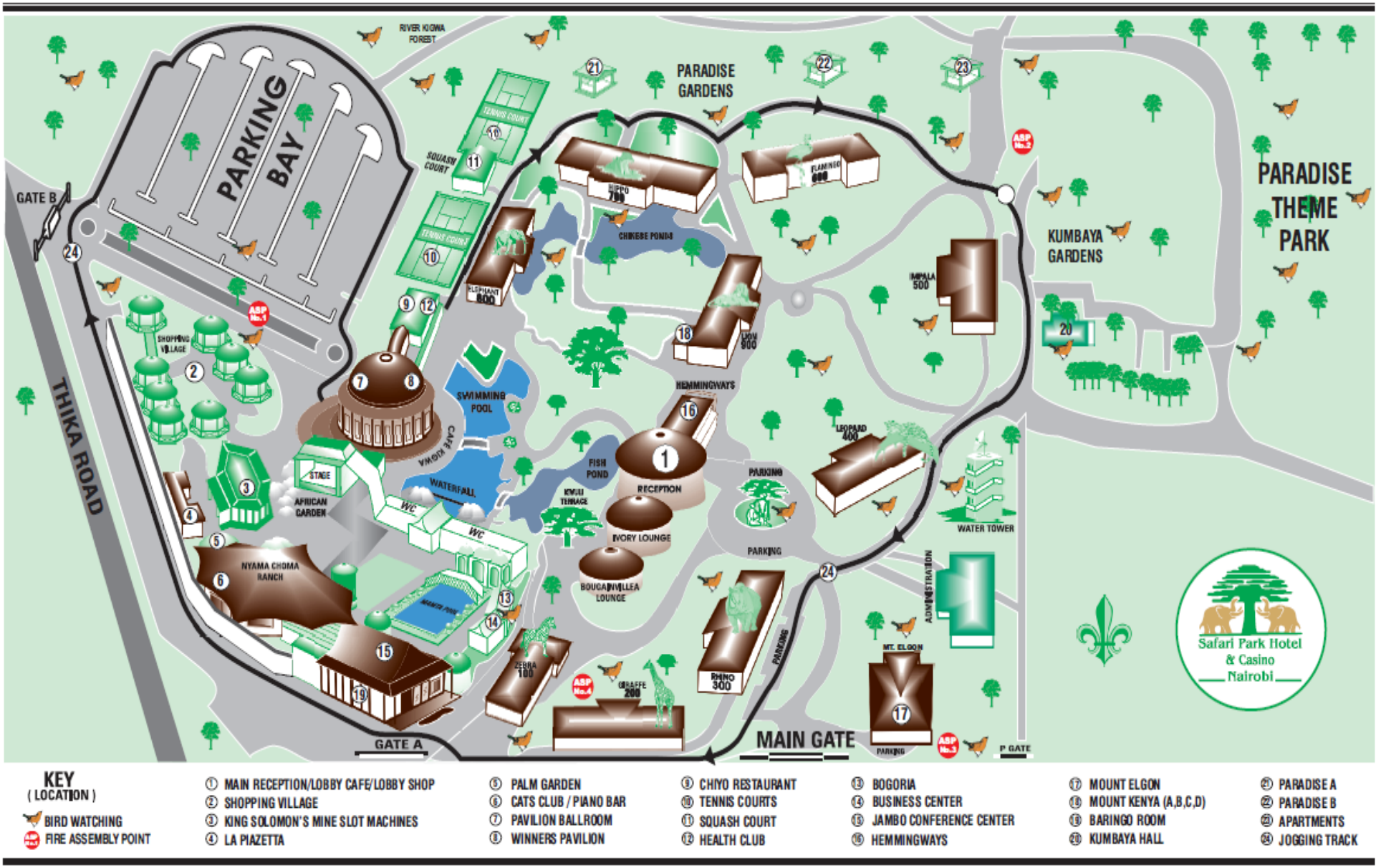
Tipping
Usually 10% at hotels and about 100-200 KShs to doorman, waiter, taxi driver, etc

Information on Safaris for delegates
There is a range of prices for mid-range tented camps: 271 Private Masai Mara Safari Tours (Offered by 46 Tour Operators) (safaribookings.com) but it is advisable you book with the Kenyan operator directly (more reasonable) rather than any US or European provider. In the past, our delegates have been 'out in bush' so speak for 2-3 nights, which means essentially you need 3-4 full days, respectively and the pick-up and drop off are from hotel (conference venue).
Safaris – Magical Skies [Quotes being sent, estimate USD 800-1000 pp for 2 nights to Mara]
BOSCO DREAM TOURS, Nairobi (254721208892) (vymaps.com) [see quotes attached for Masai Mara- these are quite reasonable for 4 and 5 star tented camps in Mara]
Both operators above can take you to Maasai Mara. You may need to determine to stay 2 or 3 nights but depending on how much time you have, 2 nights would be sufficient with 4 drives. Also note it is a long (~5 hr max) dusty ride via the spectacular even iconic Rift Valley, but enjoyable… driver/guides are flexible (personalise) to take you on more or fewer drives and to Maasai village if they do not have to await other clients in the group.

Nairobi and Environs: Day visits can be made in Nairobi suburbs e.g. Giraffe Centre, Karen Blixen House, Nairobi National Park, Animal Orphanage, etc .

Please contact Ms Eva Lee at the Symposium Secretariat on site

Security
It is important to be aware of your surroundings and ensure your own personal safety and never to leave valuables (briefcases, laptops, electronic equipment) unattended.



KEY
(LOCATION)

- BIRD WATCHING
- FIRE ASSEMBLY POINT

① MAIN RECEPTION/LOBBY CAFE/LOBBY SHOP
② SHOPPING VILLAGE
③ KING SOLOMON'S MINE SLOT MACHINES
④ LA PIAZETTA
⑤ PALM GARDEN
⑥ CATS CLUB / PIANO BAR
⑦ PAVILION BALLROOM
⑧ WINNERS PAVILION
⑨ CHIYO RESTAURANT
⑩ TENNIS COURTS
⑪ SQUASH COURT
⑫ HEALTH CLUB
⑬ BOGORIA
⑭ BUSINESS CENTER
⑮ JAMBO CONFERENCE CENTER
⑯ HEMMINGWAYS
⑰ MOUNT ELGON
⑱ MOUNT KENYA (A,B,C,D)
⑲ BARINGO ROOM
⑳ KUMBAYA HALL
㉑ PARADISE A
㉒ PARADISE B
㉓ APARTMENTS
㉔ JOGGING TRACK

Brain Ageing and Dementia in LMICs Symposium 2022

Time (am/pm)	Monday 5th December	Tuesday 6th December	Wednesday 7th December	Thursday 8th December	Friday 9th December
SPH Venue	**Ivory Lounge**	**Mt Kenya A and D**	**Pavilion Ballroom**	**Pavilion Ballroom**	**Pavilion Ballroom**
Themes			**Introduction to LMICs, Dementia types, cost**	**Risk Factors: Understanding, Identifying and Intervening**	**Diagnosis, Assessment and Care**
8:00 - 9:00	**Ivory Lounge**	**Mt Kenya A and D**	***Skills Breakfast: Funding*** *Mentors*	***Skills Breakfast: Journals*** *Mentors*	***Skills Breakfast: HIC-LMIC Collaborations*** *- Mentors*
9:00 - 10:30	IBRO-AfDC Workshop- Grants and Policy- **Chairs:** D Tshala-Katumbay (US-DRC), R Kalaria (UK-Kenya)	GBHI Fellows Session- **Chair:** V Valcour (USA) AfDC Mtg- **Chairs:** R Akinyemi, A Ogunniyi (Nigeria)	Dementia and Brain Ageing in LMICs: Global Views- **Chairs:** M Carillo (USA), A Arizaga (Argentina)	Genetic Factors- **Chairs:** M Pericak-Vance (USA), F Lopera (Colombia)	Cognitive Tests/Diagnosis- **Chairs:** M Sano (USA), R Allegri (Argentina)
10:30 - 11:00	**Break**	**Break**		**Break**	
11:00 - 12:30	IBRO-AfDC Workshop- Grants and Policy- **Chairs:** D Tshala-Katumbay (US-DRC), R Kalaria (UK-Kenya)	GBHI Fellows Session- **Chair:** V Valcour (USA) AfDC Mtg- **Chairs:** R Akinyemi, A Ogunniyi (Nigeria)	Vascular Dementia and Strokes- **Chairs:** I Skoog (Sweden), R Akinyemi (Nigeria) Resources: Global Networks **Panel**: Speakers and AfDC members	Modifiable Risk Factors I: Observational Studies- **Chairs:** G Livingston (UK), M Varghese (India) Resources: ISTAART- **Panel**: Speakers, ECRs, members of ISTAART	Biomarkers and Biobanking- **Chairs**: H Zetterberg (Sweden-UK), L Grinberg (US-Brazil) Resources: Establishing Clinical Trial Programmes- **Panel**: R Raman and Speakers
12:30 - 12:45					
12:45 - 2:00	**Lunch**	**Lunch**		**Lunch and Networking**	
2:00 - 3:30	NIA Workshop on AD and Dementias in SSA- **Chair:** D Martin (USA)	GBHI Fellows Session- **Chair:** V Valcour (USA) AfDC Mtg- **Chairs:** R Akinyemi, A Ogunniyi (Nigeria)	Movement Disorders and Dementia- **Chairs:** R Walker (UK-Tz), N Okubadejo (Nigeria)	Modifiable Risk Factors II: Interventional Studies- **Chairs:** D Acosta (Dominican R), M Guerchet (France)	Dementia Care and Policy- **Chairs:** W Weidner (UK-ADI), V Mutiso (Kenya)
3.30 - 4.00		**Break**			**Farewells**
4:00 - 5:30	NIA Workshop on AD and Dementias in SSA- **Chair:** D Martin (USA)	**Opening Session*** Chairs: R Kalaria (UK-Kenya), G Maestre (USA) **Speakers:** J Ogeng'o, MoH, Rep, A Ogunniyi, L Grinberg, D Martin, D Ndetei, M Orrell (UK), P Musa (Kenya)	Language and Aphasia- Chairs S Alladi (India), T Bak (UK) Keynote: Dementia in LMICs and Advocacy- Speaker F Manes	Dementia and Viruses: HIV and CI- **Chairs:** V Valcour (USA), S-M Paddick (UK-Tz)	
5.30-6.00		**4.00-5.45**	**5.30-6.00**		
6.00-10.00 *(variable)*		**Welcome Party**	**GBHI Networking Reception**	**Symposium Banquet (Nyama Choma Ranch)**	

IBRO Workshop on Grants and Policy

Pre-Symposium Event on Dementia in LMICs
5th December, 2022
8.30am- 1.00pm, Nairobi, Kenya
Venue: Ivory Lounge, Safari Park Hotel

Time	Monday 5th December 2022
08.30 -08.40	**Welcome** • Desire Tshala-Katumbay/Raj Kalaria, (5 min) Explain how meeting will work • Nairobi Host: Mental Health and Dementia in Kenya -D Ndetei (Kenya)
08.40-09.15 (25 min)	**Opening Session:** **Chair/Moderator: G Maestre (USA/Venezuela)** • Mechanics of Grant Writing -J Cahn (USA) and G Maestre (USA)
09.15-10.15 (60 min)	**Session 1: Recipients of Grants:** **Chair/Moderator: R Akinyemi (Nigeria)** • IBRO Postdoctoral Fellowship to NIH R01 to Build Capacity –D Tshala-Katumbay (USA-DRC) • Long-term Funding and the Wellcome Trust – O Gureje (Nigeria) • Grant Funding from MRC, UKRI and Charities – R Kalaria (USA-Kenya)
10.15-11.05	**BREAK**
11.05-12.05 (60 min)	**Session 2: Types of Studies** **Chair: A Ogunniyi (Nigeria)** What have learnt from our grant proposals? • Epidemiological Studies on Risk Factors for Dementia – D Gustafson (USA) • Stroke and Dementia Studies in West Africa – R Akinyemi (Nigeria) • Biomarkers and Bioinformatics in dementia – B Fongang (USA/Cameroon) • Animal Behaviour and Modelling Studies – R Brown (Canada)
12.05-1.00 (55 min)	**General Discussion** **Chairs: Desire Tshala-Katumbay/Raj Kalaria** **Discussants: A Millogo (Burkina Faso); V Mutiso (Kenya), A Mohammed (Sweden/Kenya), Damali Martin (USA)** Comments also from IBRO Students and ECRs • What makes successful grant applications; Best Practice • Applicant(s) and Collaborations • Funding Bodies for Africa on the Global scene • Policy and Ethics Issues Closing comments: A Ogunniyi (Nigeria)
1.00pm	**Adjourn for Lunch**

***Moderator(s) to lead and monitor discussion**
Speakers will be encouraged to be on time so that we have ample time for discussion

NIA Workshop on Ageing and Dementia
Pre-Symposium Event on Dementia in LMICs

The State of Research for Alzheimer's Disease and related dementias in sub-Saharan Africa

December 5th, 2022
2.00pm- 6.00pm, Nairobi, Kenya
Venue: Ivory Lounge, Safari Park Hotel

Time	Monday 5th December 2022
2:00 – 2:10 pm	**Welcome and Opening remarks**
2:10 pm – 3:00 pm	***State of AD research in sub-Saharan Africa*** ***15 min. presentations***
3:00 pm – 3:30 pm	***Q&A, Open discussion***
3:30 pm – 5:30 pm	***Break out session*** ***Moderator:*** *Ms. Camille Pottinger, Division of Neuroscience, NIA* *30 minutes of discussion for each question* • What are the research priorities for AD/ADRD in SSA? What resources and tools are needed to accomplish these priorities? • How can we optimize or leverage existing infrastructures (e.g., epidemiology cohorts, research consortia, H3Africa) to investigate the AD/ADRD in SSA? • What concrete opportunities should we consider to accelerate a US-Africa collaborative approach to studying AD/ADRD in SSA? What unique collaborative opportunities should we consider enhancing cross-cutting research in the field?
5:30 pm – 6:00 pm	***Report back and discussion and Closing remarks*** ***Moderator:*** *Dr. Damali Martin, Division of Neuroscience, NIA*
6:00 pm	***Adjourn***

Inaugural Meeting of the African Dementia Consortium

9.00am to 4.00pm, December 6th, 2022
Nairobi, Kenya
Venue: Mount Kenya A, Safari Park Hotel
Programme

Time	Agenda	Speaker/Anchor
9:00 am - 10:35 am	**Session I : Opening and General Overview** ● Welcome and Introductions ● Dementia Research in Africa: An historical overview ● AD Centre in a LMIC – Tunis Model ● Global Perspective on AD genetics: Introducing the READD - ADSP (Cores and Infrastructure) ● Scaling Up Dementia Research Capacity, Care and Translation in Africa : Introducing the African Dementia Consortium (AfDC) ● READD - ADSP - Projects	 Raj Kalaria Adesola Ogunniyi Riadh Gouider Margaret Pericak - Vance Rufus Akinyemi Brian Kunkle
10:35 am - 11:00am	***Break***	
11:00 am –12:45 pm	Session II: READD - ADSP Africa I ● Overview of Community Engagement : Outreach, Recruitment and Retention (ORR) Strategies ● Electronic and Paper Data Collection in READD - ADSP ● Cognitive Assessment across AfDC Sites: Harmonization, Translations and Normative Values ● Cognitive Assessment: Incorporating UDS Elements ● Consensus Diagnosis, Adjudication and Harmonization-	 Oyedunni Arulogun Onoja Akpa Stella - Maria Paddick Pedro Mena Rufus Akinyemi/Pedro Mena/Jeffery Vance
12:45 pm – 2:00 pm	***Lunch Break***	
2:00 pm – 3:45 pm	Session III: READD - ADSP Africa II ● Biological Sample Management ● CVD /AD Biomarkers ● Data Management ● General Discussion	 Kazim Akinwande/Patrice Whitehead Jeffery Vance Larry Adams/Joshua Akinyemi Akinyemi/Ogunniyi/Pericak – Vance/Jeffery Vance
4:00 pm	***Adjourn***	

Brain Ageing and Dementia in LMICs 2022
Scientific Programme

6-9 December, 2022
Nairobi, Kenya
All times are in East Africa Time

Tuesday, 6 December

4 – 5:45 p.m.

Opening and Welcome
Welcome address by convenors Rajesh Kalaria and Gladys Maestre, followed by opening remarks by Julius Ogeng'o (University of Nairobi), Patrick Amoth (Kenya MoH), Adesola Ogunniyi (AfDC), Lea Grinberg (GBHI), Damali Martin (NIH), David Ndetei (AMHRTF).

Keynote
Martin Orrell, University of Nottingham, UK
The Power of Music and Dementia

Papillion Musa, African Heritage House, Nairobi, Kenya
A concert by East African musician Papillion. Papillon, the 'Protege of Mwalimu Ayub Ogada' is among the first musicians in recent times to look at African musical instruments with an eye to redesign music…

5:45 – 8 p.m.

Welcome Reception
Poolside, Safari Park Hotel

Wednesday, 7 December

8 – 9 a.m.

Skills Breakfast: Funding
One on one time with funders and awardees over breakfast.
Mentors: Damali Martin, Stefania Forner, Victor Valcour, Valentine Ucheagwu, Lingani Mbakile-Mahlanza

9 – 10:30 a.m.

Dementia and Brain Aging in LMICs: Global Views
An overview of aging and dementia in LMIC across the globe, including cultural considerations, strengths in knowledge, emerging challenges and opportunities for collaboration.
Chairs: Maria Carrillo & Raul Arizaga

Presenters:
Adesola Ogunniyi, University College Hospital Ibadan, Nigeria
Aging and Dementia in LMIC: Africa

Agustin Ibanez, Universidad San Andrés, Argentina
Aging and Dementia in LMIC: Latin America

Gabriela Novotni, University Clinic of Neurology, North Macedonia
Aging and Dementia in LMIC: Europe

Suvarna Alladi, National Institute of Mental Health and Neurosciences, India
Aging and Dementia in LMIC: Asia

Linus Jonsson, Karolinska Institutet, Sweden
The Heath Economics of Aging and Dementia in LMIC

10:30 – 11 a.m. **Coffee Break and Posters**
Poster presentations of submitted abstracts.

11 a.m. – 12:30 p.m. **Vascular Dementia and Strokes**
Chairs: Rufus Akinyemi & Ingmar Skoog

Presenters:
Ingmar Skoog, Center of Health and Aging (AgeCap), Institute of Neuroscience and Physiology, Sahlgrenska Academy at the University of Gothenburg, Sweden
Preclinical vascular dementia. The H70–studies within NEAR

Yared Zedwe, Addis Ababa University, Ethiopia
Magnitude and Predictors of Post-Stroke Cognitive Impairment among Ethiopian Stroke Survivors: A Cross Sectional Study

Thomas Issac, National Institute of Mental Health and Neurosciences, India
Apolipoprotein E4 Allele as a Predictor in the Course and Outcome in Patients with Vascular Cognitive Decline Due to Cerebral Small Vessel Disease

Claudia Satizabal, University of Texas, USA
Biomarkers for Vascular Contributions to Cognitive Impairment and Dementia

Claudia Suemoto, University of Sao Paulo, Brazil
Vascular Dementia: A Common Cause of Dementia in Low and Middle-Income Countries

Rufus Akinyemi, University of Ibadan, Nigeria
Updates on Stroke and Vascular Cognitive Impairment in Africa

12:30 – 12:45 p.m. **Resources: Global Networks**
Short presentations about global networks in dementia science and opportunities to join and participate. Hosted by Percy Griffin
Panel: Victor Valcour, Kirti Ranchod, Wambui Karanja, Desire Tshala-Katumbay, Rufus Akinyemi

12:45 – 2 p.m. **Networking Lunch**
Discussions about collaborative networks in dementia science with relevant representatives over lunch.

2 – 3:30 p.m. **Movement Disorders and Dementia**
Chairs: Richard Walker & Njideka Okubadejo

Presenters:
Zvezdan Pirtosek, Ljubljana University Medical Centre, Slovenia
Why Movement and Thought Are So Often Affected Together?

Njideka Okubadejo, University of Lagos, Nigeria
Cognitive Function in Parkinson Disease in Africa: What We Know and What We Need to Know.

Rohan de Silva, University College London, UK
Lessons From Genetics of Movement Disorders

Kamadore Toure, Fann Teaching Hospital, Dakar, Senegal
Movement Disorders, Cognitive Function and Frailty in Senegal, West Africa

Tope Farombi, University of Ibadan, Nigeria
Feasibility, Challenges, and opportunities for deploying Telemedicine in ADRD in LMICs: an African Viewpoint

David Brodie-Mends, Korle-Bu Teaching Hospital, Ghana
Parkinson's disease: assessing non-motor symptoms and their associations with quality of life among patients in Korle-Bu teaching hospital, Ghana

Richard Walker, Newcastle University, UK
NIHR Global Health Research Group on Transforming Parkinson's Care in Africa (TraPCAf)

3:30 – 4 p.m. **Coffee Break and Posters**
Poster presentations of submitted abstracts

4 – 5:30 p.m. **Language and Aphasia**
Chairs: Thomas Bak & Michael Hornberger

Presenters:
Thomas Bak, University of Edinburgh, UK
The Implications of Linguistic Diversity for Aphasia Assessment & Treatment

Monica Rosselli, Florida Atlantic University, USA
The Relevance of Culture, Acculturation, and Bilingualism in the Clinical Diagnosis of Mild Cognitive Impairment and Dementia among Latinos/Hispanics in the USA

Faheem Arshad, National Institute of Mental Health and Neurosciences, India
Developing a Language Specific Tool for Primary Progressive Aphasia: Challenges in a Diverse Sociocultural and Multilingual Indian Context

Eliza (Eleni-Zacharoula) Georgiou, University of Patras, Greece
Utility of WOrd FInding Disorders Test (WOFI) in dysnomia detection in early Alzheimer's Disease in a Naturalistic Clinical Setting.

Michael Hornberger, University of East Anglia, UK
Spatial Disorientation – A Non-verbal Approach towards Cognitive Assessment in Preclinical and Clinical Dementia

Bruce Miller, University of California San Francisco, USA
Spectrum of Frontotemporal Dementias

5:30 p.m. - 6 p.m. **Keynote**
Facundo Manes, Chamber of Deputies of Argentina
Neuroscience, Dementia in LMICs and Public Policy

6 – 8 p.m. **Networking Reception hosted by GBHI**

Thursday, 8 December

8 – 9 a.m. **Skills Breakfast: Journals**
One on one time with global editors from leading dementia journals, over breakfast.
Mentors: Suvarna Alladi, Agustín Ibáñez, Sudha Seshadri, Rema Raman, Ishtar Govia, Martin Orrell, Raj Kalaria

9 – 10:30 a.m. **Genetic Factors**
Chairs: Peggy Pericak-Vance & Francisco Lopera

Presenters:
Francisco Lopera, University of Antioquia, Colombia
Autosomal Dominant Alzheimer Disease in Colombia

Joseph H Lee, Columbia University Medical Center
A Multiomic Examination of Alzheimer's Disease in Special High and Low Risk Cohorts

Olusegun Baiyewu, University of Ibadan, Nigeria
Risk Effect of APOE Gene in Persons Living with Alzheimer Disease in Ibadan.

David Babalola, University of Ibadan, Nigeria
Knowledge and Attitudes towards Dementia and Dementia Genetics among Geriatric Clinic Attendees at University College Hospital, Ibadan, Nigeria

Peter St George-Hyslop, Tanz Centre for Research in Neurodegenerative Diseases, University of Toronto, Toronto, Canada Canada
TREM2 Signalling in Microglia as a Genetically Defined Therapeutic Target

Jeffery Vance, University of Miami, USA
Functional Studies Towards Identifying the Protective Loci in the African Local Ancestry

10:30 – 11 a.m. **Coffee Break and Posters**
Poster presentations of submitted abstracts.

11 a.m. – 12:30 p.m. **Modifiable Risk Factors I: Observational Studies**
Chairs: Mathew Verghese & Gill Livingston

Presenters:
Gill Livingston, University College London, UK
Lifetime Modifiable Risks for Dementia in Different Cultures

Prekshya Thapa, B.P. Koirala Institute of Health Sciences, Nepal
Prevalence of Common Mental Disorders (Depression and Anxiety), Dementia and Disability Among Community Residing People Aged ≥60 in Nepal.

Noeline Nakasujja, Makerere University Uganda
Alzheimer's Disease in the Ugandan Community: Detection and Validity of Diagnosis

Albertino Damascneo, Eduardo Mondlane University, Mozambique
High Blood Pressure and Late Dementia

Celesin Kaputu, University of Kinshasa, Democratic Republic of Congo
Assessing Cognition Function in Diabetics in Bukavu, DRC

Robert Friedland, University of Louisville, USA
The Interactions of Diet and the Microbiome and the Modifiable Risk Factors for Alzheimer's Disease

12:30 – 12:45 p.m.

Resources: ISTAART
Short presentations about opportunities with the International Society to Advance Alzheimer's Research and Treatment. Hosted by ISTAART.
Panel: Agustin Ibanez, Rema Raman, Ratnavalli Ellajosyula, Suvarna Alladi, Lea Grinberg, Chinedu Udeh-Momoh

12:45 – 2 p.m.

Networking Lunch
Discussions about opportunities in ISTAART with relevant representatives over lunch.

2 – 3:30 p.m.

Modifiable Risk Factors II: Interventional Studies
Chairs: Daisy Acosta & Maelene Guerchet

Presenters:
Eef Hogervorst, Loughborough University, UK
Dementia prevalence in different areas in Indonesia

Solomon Nyame, Kintampo Health Research Center, Ghana
Prevalence and Risk Factors of Dementia among People of 70 years and over in Kintampo, Rural Ghana

Iracema Leroi, Trinity College, Dublin, Ireland
Eyes, ears and mind: Sensory-Cognitive Health in Older People

Sudha Seshadri, The University of Texas Health Science Center at San Antonio, USA
Modifiable Risk Factors for Dementia: Role of Diet, Sleep, Physical Activity and Social Networks

Masafumi Ihara, National Cerebral and Cardiovascular Center, Japan
A role of Streptococcus mutans in intracerebral hemorrhage --a potential target of preventive interventions

Antoine Gbessemehlan, University of Bordeaux, France
Association between depression, anxiety, and dementia among older people in Central Africa

Chinedu Udeh-Momoh
A Multi-National Collaboration to Assess the Feasibility and Sustainability of Implementing Multimodal Brain Health Promotion Strategies in Sub-Saharan Africa (The WWFINGERS-AFRICA Project)

3:30 – 4 p.m. **Coffee Break and Posters**
Poster presentations of submitted abstracts.

4 – 5:30 p.m. **HIV and Dementia**
Chairs: Stella-Maria Paddick & Victor Valcour

Presenters:
Stella-Maria Paddick, Newcastle University, UK
Current Challenges in Identification of HIV-associated Neurocognitive Disorders (HAND), An Overview

Anna Dreyer, University of Cape Town, South Africa
Cognitive performance in people with HIV living in a peri-urban community in Cape Town South Africa: Determining impairment and the role of psychosocial factors

Sam Nightingale, University of Cape Town, South Africa
A New Approach to Cognitive Impairment in People Living with HIV.

Mamuka Djibuti, Partnership for Research and Action for Health (PRAH), Tbilisi, Georgia
Research Gaps in HIV and Non-Communicable Diseases (NCD) related to Vascular Cognitive Impairments and Dementias (VCID) in Eastern Europe and Central Asia

Jaime Vera, Brighton and Sussex Centre for Global Health Research, University of Sussex, UK
Assessing health related quality of life in people living with HIB and cognitive impairment

Primrose Nyamayaro, University of Zimbabwe, Zimbabwe
Acceptability and Feasibility of Routine Screening for Neurocognitive Impairment in Adults Living with HIV

8 p.m. **Symposium Safari Banquet**
Nyama Choma Ranch

<u>Friday, 9 December</u>

8 – 9 a.m.

Skills Breakfast: HIC-LMIC Collaborations
One on one time with global leaders in dementia research to discuss best practices for collaboration, over breakfast.
Mentors: Rufus Akinyemi, Lea Grinberg, Iracema Leroi, Maelenn Guerchet, Peggy Pericak-Vance

9 – 10:30 a.m.

Cognitive Testing and Diagnosis
Chairs: Mary Sano & Ricardo Allegri

Presenters:
Ratnavalli Ellajosyula, Manipal Hospital, India
Delays and Underdiagnoses of Dementia in the LMICs: An Indian Perspective

Seid Gugssa, Addis Ababa University, Ethiopia
Cross-cultural adaptation of AD-8 into Amharic for operationalizing the detection of cognitive impairment in a primary care setting of Ethiopia

Tarek Bellaj, Qatar University, Qatar
Suitability of Neuropsychological Tests for the Assessment of Dementia in Africa: A Systematic Review

Maira Okada de Oliveira, University of São Paulo, São Paulo, Brazil
Development of the Brazilian Mini-Addenbrooke's Cognitive Examination (MINI-ACE BR)

Lingani Mbakile Mahlanza, University of Botswana, Faculty of Social Sciences, Psychology Department, Botswana
Validation of a cognitive assessment battery in the Botswana population

Ricardo Allegri, Neurological Research Institute Fleni, Argentina
How We should Work to Join Forces in an Attempt to Promote the Scientific Research in LMIC: Experience from Latin America.

Mary Sano, Mount Sinai School of Medicine, Bronx, NY, USA
Cross cultural lessons learned.

10:30 – 11 a.m.

Coffee Break and Posters
Poster presentations of submitted abstracts.

11 a.m. – 12:30 p.m.

Biomarkers & Biobanking
Chairs: Henrik Zetterberg & Lea Grinberg

Presenters:
Ranil de Silva, General Sir John Kotelawala Defense University, Sri Lanka
Neuro-BioBank Sri Lanka Creating Opportunities: Cognitive, Molecular Biomarker Discovery and Natural Product Therapeutics

Lea Grinberg, University of California San Francisco, USA
Biomarkers and Biobanking

Diego Sepulveda-Falla, University of Hamburg, Germany

Deep Phenotypic Characterization of Familial Alzheimer's Disease PSEN1 E280A Brains

Marufjon Salokhiddinov, Tashkent Medical Academy, Uzbekistan
Automated MRI-based analysis of medial temporal lobe volume is a key biomarker at early stage of Alzheimer's disease

Henrik Zetterberg, University of Gothenburg, Sweden
Blood Biomarkers: Democratizing Neurodegenerative Disease Diagnostics

Mie Rizig, University College London, UK
Racial Disparities in Dementia Biomarkers' Research Focussing on Differences between Black African and Caucasians

12:30 – 12:45 p.m. **Resources: Establishing Clinical Trial Programs**
Short presentations about recruiting individuals into dementia trials and best practices. Hosted by Rema Raman
Panel: Ratnavalli Ellajosyul, Mary Sano, Henrik Zetterberg, Francisco Lopera

12:45 – 2 p.m. **Networking Lunch**
Discussions about recruiting individuals into dementia trials with relevant representatives over lunch.

2 – 3:30 p.m. **Dementia Care and Policy**
Chairs: Victoria Mutiso & Wendy Weidner
Panelist: Martin Orrell, *Quality Standards on Human Rights for Services in Dementia Care*

Presenters:
Joy Onoria, Makerere University College of Health Sciences; School of Medicine; Department of Psychiatry, Uganda
ADRD in a Ugandan Context

Felix Potocnik, South Africa
Overview, Policy, Care and Future Directives of South African Dementia Patients

Noe Garza, University of Texas Rio Grande Valley, USA
Critical reflection in practice: Generating Knowledge from the Interactions with Promotores for Engagement in Neurocognitive Disorders.

Christine Musyimi, Africa Mental Health Research and Training Foundation, Kenya
Integrating a community-level dementia screening programme in Kenya

Ishtar Govia , Epidemiology Research Unit, Caribbean Institute for Health Research (CAIHR), The University of the West Indies.
Policy Relevant Experiences from Jamaica

3:30 p.m. **Close and Farewell**

POSTERS

Vascular Dementia and Strokes

P-01 **Bernard Fongang**, Glenn Biggs Institute for Alzheimer's & Neurodegenerative Diseases, University of Texas Health Sciences Center, USA
Changes in the gut microbiome composition may parallel Alzheimer's disease progression

Movement Disorders and Dementia

P-02 **Albert Stezin**, Centre for Brain Research; National Institute of Mental Health and Neurosciences, India
Contributory factors for mild cognitive impairment and dementia in spinocerebellar ataxia 2

P-03 **Opeyemi Ogunsuyi**, The Federal University of Technology Akure, Nigeria
Comparative Effect of Caloric and Non-Caloric Sweeteners on Neuroinflammatory Indices in Brain Cortex and Hippocampus of Scopolamine-Induced Rat Model of Amnesia

P-04 **Ayanthi Samarakone**, General Sir Kotelawala Defence University (KDU), Sri Lanka
Dietary Neuroprotection on the Degree of Proteinopathies in Sri Lankan Aging Autopsy Brains: A study protocol

Language and Aphasia

P-05 **Esti Blanco-Elorrieta**, Harvard University, USA
Mapping cortical lesions and communicative deficits in bilingual aphasia

Modifiable Risk Factors: Observational Studies

P-06 **Vincent Olughor**, Faculty of Pharmacy, Department of Pharmaceutics and Industrial Pharmacy, University of Ibadan, Nigeria
Awareness creation on the molecular and cellular events common to Ageing and Neurodegenerative diseases such as Alzheimer's disease (AD) and the distinctions between both: Implications for AD Therapeutic Formulations Interventions

P-07 **Jackline Karungi**, College of Health Sciences, Makerere University, Uganda
SOCIAL NETWORKS FOR OLDER ADULTS WITH AND WITHOUT ALZHEIMER'S DISEASE IN CENTRAL UGANDA

P-08 **Jonathan Zegarra-Valdivia**, Achucarro Basque Center for Neuroscience; Global Brain Health Institute (GBHI), University of California San Francisco; Universidad Señor de Sipán, Spain; USA; Peru
Lifestyle and Sociodemographic Features impacts the cognitive performance of Peruvian Adults

P-09 **Nkouonlack Cyrille**, Faculty of Health Sciences, University of Buea; Brain Research Africa Initiative, Cameroon
Prevalence and Determinants of Dementia among the elderly in the Buea Health District: A Community-Based Study.

P-10 **Funmi Akindejoye**, Global Brain Health Institute, TCD, Ireland
A COMPARATIVE REVIEW ON THE INFLUENCE OF URBAN DESIGN ON MENTAL HEALTH IN A DEVELOPED AND DEVELOPING NATION

P-11 **Wambui Karanja**, Global Brain Health Institute, Trinity College Dublin, Ireland
African Brain Health Interactive Dashboard: Improving access to epidemiological data on established and emerging dementia risk factors and determinants of brain health for countries in Africa

P-12 **Wyllians Borelli**, Universidade Federal do Rio Grande do Sul, Brazil
Poor sleep quality and frequent use of sleep drugs were associated with dementia: an ELSI-Brazil study

Modifiable Risk Factors: Interventional Studies

P-13 **Lina Velilla**, Global Brain Health Institute; Grupo de Neurociencias, Universidad de Antioquia, USA; Colombia
Latin American strategy for dementia prevention through lifestyle modification. Colombian experience in a multicenter study with 12 Latin American countries.

HIV and Dementia

P-14 **Upal Roy**, The University of Texas Rio Grande Valley, USA
The interaction of Type 1 Interferon and STAT1 in HIV-associated neurocognitive disorder (HAND) and Alzheimer's Disease pathology

P-15 **Deborah Gustafson**, State University of New York Downstate Health Sciences University, USA
Vascular Contributions to Cognitive Impairments and Dementias in People Living with HIV in the Country of Georgia.

Cognitive Testing and Diagnosis

P-16 **Toure Kamadore**, Université de Thiès, Senegal
The Test of Keur Madiabel is a valid and reliable tool to assess ADL for the screening of dementia

P-17 **Rademene Oria**, Cross River University of Technology, CRUTECH, Nigeria
Modulatory role of curcumin on cobalt-induced cognitive deficit, oxidative damage and astrocytosis: involvement of Nrf2 signaling.

P-18 **Raphaella Lewis**, University of Cape Town, South Africa
Screening for proteinopathic-related dementias in low-resource clinical contexts: A machine learning approach

P-19 **Aminette D'Souza**, Cardiff University, United Kingdom
Developing a tablet-based cognitive tool for dementia assessment across cultures: A pilot study with healthy adults in the UK and India

P-20 **Valentine Ucheagwu**, Global Brain Health Institute Trinity College, Ireland

Prevalence and Patterns of Cognitive Impairments in a Sample of Older Adult Community Dwellers from Nigeria

P-21 **Samuel A Onasanwo**, University of Ibadan, Nigeria
ANTI-AMNESIC POTENTIALS OF ETHANOL EXTRACT OF Adenopus breviflorus FRUIT IN SCOPOLAMINE-INDUCED MEMORY IMPAIRMENT IN WISTAR RATS.

P-22 **Kevin Thomas**, University of Cape Town, South Africa
Associations between Technological Experience and Tablet-Based Neurocognitive Test Performance: Data from cognitively impaired South African older adults

P-23 **Chukwuanugo Ogbuuagu,** Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nigeria
Primary Health Care providers knowledge of Cognitive Assessment and Tools for geriatric population in Southeast Nigeria: a pilot survey.

Biomarkers and Biobanking

P-24 **Akintunde Orunmuyi**, Kenyatta University Teaching, Research and Referral Hospital, Kenya
Imaging Dementia in African Populations: Closing the Gap on Challenges - A perspective

P-25 **Jeremy A. Tanner**, Renaud La Joie, Lucy Hanna, Leonardo Iaccarino, Isabel E. Allen, Barry A. Siegel, Bruce E. Hillner, Rachel A. Whitmer, Constantine Gatsonis, Maria C. Carrillo, Gil D. Rabinovici, Glenn Biggs Institute for Alzheimer's & Neurodegenerative Diseases
UT Health San Antonio Tannerj1@uthscsa.edu
Predictors and Outcomes of Discordance Between Pre-PET Clinical Diagnosis and Amyloid-PET Results in the Imaging Dementia—Evidence for Amyloid Scanning (IDEAS) Study

Dementia Care and Policy

P-26 **MUSA ILIYASU**, Kogi State University, Nigeria
The Therapeutic Potential of Neural Stem Cells on D-galactose- and Lead-Induced Alzheimer-like Disease in a Rat Model

P-27 **Anna Tjin**, RCSI SIM Centre for Simulation Education and Research, RCSI University of Medicine and Health Sciences, Ireland
Role alteration, coping strategies, and resource accessibility of south asian care partners of individuals with brain health conditions during the COVID-19 pandemic.

P-28 **Olufisayo Elugbadebo**, College of Medicine, University of Ibadan; University College Hospital Nigeria
Predictors and reasons for discontinuity of care among people diagnosed with dementia in a memory clinic in South West Nigeria

P-29 **Núbia de Freitas**, Universidade Federal do Rio Grande do Sul, Brazil
Social determinants as risk factors for dementia using ELSI-Brazil cohort data

P-30 **Dorkhy Geeta**, Association Alzheimer's, Mauritius, Mauritius
A triangulated study on the non-pharmacological management of Alzheimer's disease in Mauritius.

P-31 **José Cavazos**, Neurology and Physiology UT Health San Antonio, USA
The value of trainee career development as the focus of collaborations between neurology centers from high and low resource countries

Others

P-32 **Stephen Wandera**, Makerere University, Uganda
Cognitive Stimulation Therapy for older people with Dementia in Africa: A Scoping Review

P-33 **Edem Edem**, University of Lagos; Afe Babalola University, Nigeria
Immunomodulatory Role of African Mistletoe Lectins on Microglial Activity following Lipopolysaccharide Exposure

P-34 **Thamara Tapia-Muñoz**, Millennium Institute for Caregiving Research; University College London, Chile; United Kingdom
Factors associated with changes in emotional and social loneliness among Latin American family care partners of people with dementia and other long-term conditions during Covid-19

P-35 **Ademola Oremosu**, University of Lagos, Nigeria
Tapinanthus cordifolius abrogates gastrointestinal dysregularion via the modulation of enteric inflammation and neurtrophin signaling in a mouse model of Alzheimer's disease

P-36 **Iracema Leroi,** Global Brain Health Institute; Trinity College Dublin, Ireland
Dementia Training Academy for Clinicians in South Asia: Outcomes and Impacts

P-37 **Victor Nwinee**, AXA OneHealth, Nigeria
LATE ONSET VITILIGO AND MENTAL HEALTH AMONG THE ELDERLY IN NIGERIA.

P-38 **Luciano Mariano**, Programa de Pós-Graduação em Neurociências, Universidade Federal de Minas Gerais; Universidade Federal de Minas Gerais, Brazil
Neuroanatomical Substrates of Apathy in Dementia

P-39 **Mario Gil,** The University of Texas Rio Grande Valley; The University of Texas Rio Grande Valley School of Medicine; RGV Alzheimers Center (AD-RCMAR), USA
Investigation of the interaction among psychosocial and behavioral factors, cognition, aging, and Alzheimer's Disease and related Dementias from a translational research perspective

P-40: Isaac Enrique Berumen-Ocegueda, Angélica Zuno Reyes, Maribel Orozco, Sofia Dumois-Petersen, Ana Karen Preciado-Baron, Karina Pérez-Rubio, Geovany Cornejo-Loera, Victor J. Sánchez González, Luis Eduardo Figuera-Villanueva, Lourdes Ramírez Dueñas, John M Ringman, and **Esmeralda Matute**·
Demographic characteristics in families with APP V717I and PSEN1 A431E variants in Jalisco, México

Funding for this conference was made possible in part by Grant # 1 R13 AG066391-01 from the National Institute on Aging. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

WELCOME SESSION

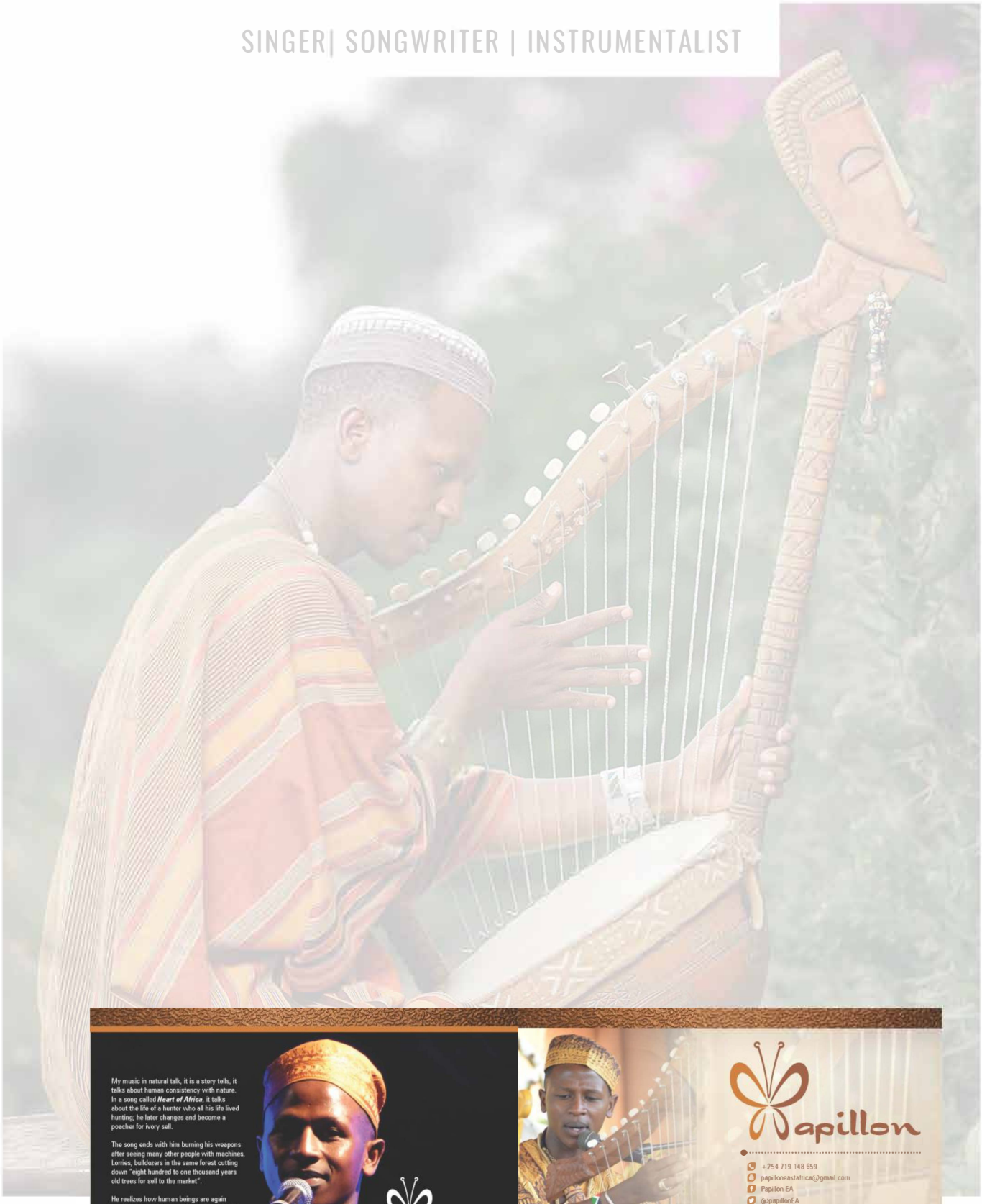
Keynote: The Power of Music and Dementia

Martin Orrell

Director, Institute of Mental Health, Institute of Mental Health, University of Nottingham, Jubilee Campus, Triumph Road, Nottingham, NG7 2TU, United Kingdom

Music offers a deep window into enhancing, narrating and articulating the human experience. Being able to link to past memories and emotional chords, but also to create and consolidate memories and experiences. The importance of music in dementia relates to not only listening, making and singing but also as a vehicle to help us all relate to the experiences of people with dementia and their carers. This presentation will explore recent research on the therapeutic value of music in dementia. The MIDAS study developed a scale to measure engagement and participation in music activities and the PAMI study follows on from this to assess the benefits of incorporating music activities into daily routines in long term care settings. The MIDDEL international study and the PRESIDE study look at the potential benefits of choirs for people with dementia also highlighted in the UK by the BBC programme 'My Dementia Choir'. Lastly, Schneider's research was used to develop the Opera 'Take Care' which tells the powerful story of the
supporting people with dementia at home. 'Take Care' draws on the personal diaries of home care staff and their experiences of working with people with dementia and their carers. This gives the audience a window into what life is like with dementia and shows how music can deeply enrich public understanding.

SINGER| SONGWRITER | INSTRUMENTALIST



My music in natural talk, it is a story tells, it talks about human consistency with nature. In a song called ***Heart of Africa***, it talks about the life of a hunter who all his life lived hunting; he later changes and become a poacher for ivory sell.

The song ends with him burning his weapons after seeing many other people with machines, Lorries, bulldozers in the same forest cutting down "eight hundred to one thousand years old trees for sell to the market".

He realizes how human beings are again nature. It is natural world that give us water mass, park hills, rivers, forest. This gives my heart a responsibility and a course. It is nature that heart inspired beautiful melodies.

Papillon

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(Milestone / Musicians)
https://www.youtube.com/watch?v=ZeVDV_5yYBY

PLATFORM PRESENTATIONS

Ageing and Dementia in LMIC: Africa.

Adesola Ogunniyi

Department of Medicine, College of Medicine, University of Ibadan, University College Hospital, Ibadan, Nigeria; Email: aogunniyi@com.ui.edu.ng

Africa is not left out of the current global aging phenomenon. According to data from the World Bank, the absolute total number of individuals aged 65 years and above in Africa increased from about 6.9 million to 35.5 million between 1960 and 2021. In tandem with this aging trend is the projected increase in the number of dementia cases by over 250% in sub-Saharan Africa between 2015 and 2050. Recent prevalence estimates from community-based studies have reported rates similar to or even exceeding those reported in western countries. Although the older persons are revered in African culture, the behavioral changes that occur in dementia are associated with both enacted and implied stigma. In comparative community-based studies in Tanzania and Nigeria, a significant proportion of the respondents opined that dementia was associated with shame and embarrassment while some felt that anyone suffering from dementia should not be taken seriously.

The emerging challenges include the rapid increase in the number of dementia cases in the face of dwindling resources in African countries; limited treatment options; changing life styles with adoption of western practices contributing to high burden of stroke and other chronic cardiovascular diseases, as well as rural-urban migration which compromises the extended family system that had hitherto served as buffer for care provision at community level. Global collaborations are essential for improved diagnosis including endophenotyping for more accurate classification, documenting genetic diversity using populations in Diaspora, and identification of unique environmental risk factors that may interact with genes in phenotypic expression.

Ageing and Dementia in LMIC: Latin America.

Agustin Ibanez

Director, Latin American Brain Health Institute (BrainLat), Universidad Adolfo Ibanez, Chile
Senior researcher, Universidad de San Andres & CONICET, Argentina; Senior Atlantic Fellow, Global Brain Health Institute (GBHI), University of California San Francisco (UCSF), USA; Trinity Collegue Dublin (TCD) Ireland

In comparison with other regions, brain health problems and dementia prevalence in Latin America are growing rapidly, along with the consequent clinical, social, and economic burden upon patients and their families. The combination of fragile health care systems, large social inequalities, and isolated initiatives makes the coordination of efforts imperative. Moreover, multilevel collaborations at clinical, research, capacity building and innovation are critically needed. In this talk, I will provide an overview of aging and dementia in Latin America, including cultural considerations, strengths in knowledge, emerging challenges and opportunities for global collaboration in the field. I will introduce three regional initiatives that may help to forge strong alliances with global settings: The Latin America and the Caribbean Consortium on Dementia (LAC-CD), the Multi-partner consortium to expand dementia research in Latin America (ReDLat), and The Latin American Brain Health Institute (BrainLat). I first provide an overview of LAC-CD, ReDLat and BrainLat, highlighting the opportunities for networking and collaboration. These comprise (a) data sharing and multicentric comparisons regarding genetic, social, and economic factors that drive brain health; (b) neurocognitive assessment models of neurodegenerative conditions and healthy aging; (c) development of affordable markers of disease; (d) computational modeling; (e) current knowledge-to-action framework which paves the way for a future regional action plan; and (f) international educative collaborations and private initiatives promoting brain health, brain capital, and brain health diplomacy. Coordinated actions are crucial to forging strong regional bonds, supporting the implementation of regional dementia plans, improving health systems, and expanding research collaborations.

Dementia management in Southeast Europe -current situation, gaps and challenges

Novotni Gabriela [1,2], Novotni Antoni [2,3]

1 University Clinic of Neurology, Medical Faculty-University of Ss. Cyril and Methodius, Skopje, North Macedonia
2 Institute for Alzheimer's Disease and Neuroscience-Skopje, North Macedonia
3 University Clinic of Psychiatry, Medical Faculty-University of Ss. Cyril and Methodius, Skopje, North Macedonia

Dementia has been and still is a challenge for the neuroscience of the 21st century, but for people living with dementia and their families, proper management and improving quality of life is still an unmet need in many countries. As the number of people living with dementia is expected to triple by the year of 2050, especially in low-and middle-income countries, dementia management should be regarded as a top medical and social priority.
The Southeast Europe (SEE) is a geographical subregion of Europe, consisting primarily of the Balkans, which analyzed from the perspective of dementia management offers diversity in dementia understanding, diagnosis and treatment.
Having North Macedonia as a starting point and comparator, different aspects in dementia management will be analyzed across the Southeast Europe region. I will mainly focus on the current situation regarding the epidemiological data, the diagnostic protocol, the use of biomarkers as well as the post-diagnostic care. By analyzing the differences among the countries, the weaknesses and strengths will be discussed, and positive coping models and dementia management strategies will be identified, reflecting the path forward for the countries lagging behind.
From fighting stigma and myths to timely diagnosis, from brain-drain and job-related mobility to hearing the voice of the caregivers, the interprofessional dementia care, coordination of services and the importance of having a National Dementia Strategy are just few of the topics to be discussed, reflecting the challenging times in dementia management in SEE.

Aging and Dementia in Asia

Suvarna Alladi

National Institute of Mental Health and Neurosciences, Bangalore, India ; Email: alladisuvarna@hotmail.com

The number of people living with dementia in Asia is rising rapidly and it is estimated that nearly half of the total number of people with dementia worldwide live in Asia. The low awareness of dementia, limited availability of skilled professionals and inadequate resources to meet the healthcare needs are major challenges in majority of countries in Asia. Sociocultural and linguistic diversity characterise populations in Asia and impact risk/protective factors and also diagnosis of dementia. Ethnic diversity in Asia contributes to a marked degree of genetic diversity in dementia risk. There is little research in emerging areas of biomarkers and clinical trials for dementia in Asia and future investigation can provide novel explanations about dementia pathogenesis and treatment. There is a real need to create awareness and work towards developing health-care, rehabilitative and long-term care services for dementia. It is crucial to promote and support further research into dementia, develop evidence to fill research gaps and aid in the development of policy changes towards reducing burden of dementia in Asia.

The economic impact of dementia in low- and middle-income countries

Linus Jönsson

Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Stockholm, Sweden

The global societal costs of dementia have been estimated to $1.3 trillion in 2019[1]. Currently, the three quarters of these costs fall on high-income countries though the majority of patients (61%) live in low- and middle-income countries (LMIC). In coming decades, the bulk of new dementia cases will occur in middle income countries. The economic burden of dementia in LMIC is an important subject of study, however comparatively few studies have however examined the costs of dementia in LMIC. A recent review[2] identified 165 cost-of-illness studies out of which only 27 from LMIC – and only two studies from sub-Saharan Africa.

The direct cost of care per person with dementia in LMIC is approximately $3,500 (international dollars, adjusted for purchasing power), however the main problem currently is the unavailability of affordable dementia care services. Informal care constitutes about 65% of the total cost per person with dementia of $10,000 - on average family members and other informal caregivers provide almost 8 hours of care per day per person with dementia. Women bear the brunt of this burden, in particular in low-income countries where 77% of informal care is provided by women. The projected increase in dementia prevalence may counteract efforts to improve opportunities and increase labor force participation for women. Currently, we estimate that 3.3% of the female work force is diverted to informal dementia care in LMIC, and this number is set to increase. These aspects should be factored in when assessing the cost-effectiveness of programs for dementia prevention and caregiver support in LMIC.

1. Global status report on the public health response to dementia. World Health Organization, 2021.
2. A Wimo et al. The Worldwide Cost of Dementia in 2019. Manuscript submitted for publication

Preclinical vascular dementia. The H70–studies within NEAR

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Background: The number and proportions of older people are increasing world-wide, which will result in an increasing number of people with dementia. The most common type of dementia, Alzheimer's disease, has a long preclinical phase. i.e. a state with pathological markers without clinical symptoms, of more than 20 years. It is likely that also vascular dementia has a preclinical phase before symptoms of dementia develops. It may be an interaction between preclinical AD and VaD.
Methods: The Gothenburg H70 Birth Cohort Studies include representative birth cohorts born 1901-02, 1906-07, 1911-12, 1922, 1923-24, 1930, and 1944 followed longitudinally from age 70 until death, and the Prospective Population Study on Women, with more than 50 year of follow-up. The studies include psychiatric, somatic, audiological, opthalmological, psychological, social, genetic, dietary, functional, and psychometric examinations, personality, collection of blood, plasma, serum, and cerebrospinal fluid, and examinations with MRI.
Results: We found that the risk of dementia was increased both 5 years before stroke and 10-15 years after the stroke, supporting that vascular dementia has a preclinical stage with silent vascular brain pathologies, such as silent strokes, lacunar infarcts, ischemic white matter lesions, and microbleeds. These changes are related to potentially preventable risk factors, such as atrial fibrillation and hypertension. During preclinical vascular dementia, there are interactions with several manifestations of preclinical Alzheimer's disease.
Conclusions: Preclinical vascular dementia is common and potentially preventable. It may also have implications for Alzheimer's disease.

Magnitude and predictors of post-stroke cognitive impairment among Ethiopian stroke survivors: A cross sectional study

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Background: In in sub-Saharan African countries stroke is the leading causes of disability and mortality. Cognitive dysfunction is common among stroke survivors with a significant negative effect on patient quality of life: however, there is no data on the burden of post-stroke cognitive impairment (PSCI) from Ethiopia. We explored the magnitude and predictors of PSCI among Ethiopian stroke survivors.

Methods: A prospective, cross-sectional study was conducted at Tikur Anbessa Specialized Hospital outpatient stroke clinic over a period of five months. Adult (>18 years old) first ever stroke survivors who came for follow up 3 months after the last stoke ictus were enrolled. Demographic and clinical data were obtained. Montreal Cognitive Assessment Scale-Basic (MOCA-B) was used to assess post-stroke cognitive function. Physical recovery and depression after stroke were evaluated by the modified Rankin Scale (mRS) and Patient Health Questionnaire-9 (PHQ-9), respectively. Univariate and multivariate logistic regression analysis were used to determine predictors of PSCI.

Results: Of the 67 stroke survivors, the mean age was (52.1 ± 12.7 years) and 37.3% were cases of stroke in the young (age ≤45 years). Females accounted for 40.3% and a quarter (25.4%) of the participant were illiterate. The median duration of stroke was 3 years. Post-stroke cognitive impairment (MOCA-B score <19) was identified in 28/67 (41.8%) subjects. Of these, 20 (30%) had MCI and 8 (12%) had post-stroke dementia. On multivariate analysis, age greater than 55 years (AOR=0.24, 95% CI: 0.07,0.83), lower education (AOR=4.02, 95% CI: 1.13,14.32) and poor physical recovery (mRS >3) (AOR=0.27, 95% CI: 0.08-0.81) were predictors of poststroke cognitive impairment.

Conclusion: In this study we found that cognitive impairment is a common complication among Ethiopian stroke survivors. Important predictors of PSCI were identified. There is urgent need to integrate routine screening and proper management for cognitive dysfunction among stroke survivors.

Apolipoprotein E4 Allele as a Predictor in the Course and Outcome in Patients with Vascular Cognitive Decline Due to Cerebral Small Vessel Disease

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Background
Vascular dementia (VaD) is the second most common dementia in elderly and the major contributor being Cerebral Small Vessel Disease (SVD) which has radiological manifestations of White Matter Hyperintensities(WMH), Cerebral Microbleeds and Lacunar infarcts. This study looks into the role of clinico-demographic profile, genetic factors in terms of Apo E4 status and neuropsychological characteristics in predicting the course and outcome in patients with Subcortical VaD.

Patients and Methods
A prospective cohort study involving 202 patients who were followed up at baseline and subsequently after 1 and 2 years' time intervals following informed consent and IEC approval with attempt to understand the role of APOE4 positive status as a predictor for cognitive decline. Comparison of Neuropsychological test performance with ANOVA, regression analysis and survival analysis by plotting Kaplan Meier's curve was done using SPSS v.21.
Results
The major risk factor identified was Hypertension in 92% followed by smoking in 76% and low socioeconomic status in 56% patients. 35.7% of the population had an APO E4 allele positivity. Regression analysis done showed APO E4 positive status as a significant independent predictor of poorer performance in neuropsychological test scores across time periods. However, survival analysis utilizing Kaplan Meir's plot showed that unlike smoking and WMH (Odds ratio : 2.62) which increased mortality rates more than twofold, APO E4 did not contribute to increased mortality.
Conclusion
This study comprehensively looks into the role of APO E4 in VaD and identifies need for prevention of modifiable risk factors like smoking, hypertension, low SES, poor cognitive reserves and WMH which predicts cognitive decline in subcortical VaD and lead to early mortality in patients with VaD. Positive APO E4 allele status significantly affects performance in cognitive assessments but does not appear to predict mortality and hence risk modification needs to be tailored in patients with VCI.

Learning objectives-
To understand the role of APO E4 in cognitive decline in VaD
To understand the role of modifiable clinico-demographic factors of patients with VaD.

Keywords-
Vascular dementia, APO E4 allele, modifiable risk factors, cognitive performance

Biomarkers for vascular contributions to cognitive impairment and dementia

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Vascular risk factors play a significant role in increasing the risk of cognitive impairment and dementia through several mechanisms affecting the brain vasculature, often magnifying underlying neurodegenerative processes. The dementia field has made tremendous progress to identify biomarkers for Alzheimer's disease based on the amyloid/tau/neurodegeneration (ATN) criteria. However, additional efforts are needed to identify biomarkers reflecting small vessel disease, which contributes to vascular cognitive impairment and dementia (VCID). Recent efforts have been oriented towards the identification and validation of biomarkers for VCID, which will allow for earlier identification of persons at risk and improved monitoring of disease progression. Such efforts will be invaluable for clinical trials and other interventional studies for VCID. This is critical, given that effective therapeutic strategies targeting the management of vascular risk factors are currently available, safe, and effective. In this talk, we will review VCID, and describe the most promising VCID biomarkers. We will center the discussion on the biomarkers under clinical validation in the MarkVCID consortium: Neurofilament Light (NfL), Peak-With of Skeletonized Mean Diffusivity (PSMD), Free Water, Cerebrovascular Reactivity (CVR), and ARTerioloSclerosis (ARTS). We will finish with a discussion on the implications for the utility of VCID biomarkers in low- and middle-income countries, which have a disproportionate burden of both vascular risk factors and dementia.

VASCULAR DEMENTIA: A COMMON CAUSE OF DEMENTIA IN LOW AND MIDDLE-INCOME COUNTRIES

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Clinicopathological studies are important to determine the brain lesions underlying dementia. Although almost 60% of individuals with dementia live in developing countries, few clinicopathological studies focus on these individuals. The Biobank of Aging Studies is the largest brain bank in Latin America with a current collection of more than 1,600 brains. I will present our findings regarding the frequency of vascular and neurodegenerative neuropathological lesions in this large sample of Brazilian admixed older adults, their correlation with cognitive and neuropsychiatric symptoms, and the accuracy of dementia subtype diagnosis. I will also discuss the importance of mixed dementia, especially in very old adults.

Updates on Stroke and Vascular Cognitive Impairment in Africa

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Less than a century ago, stroke was considered rare in African populations particularly those of sub-Saharan origin. Today, locations in Africa have recorded some of the highest global measures of stroke with annual incidence rate of up to 316 per 100,000, prevalence rate of up to 1460 per 100,000 and 3-year fatality rate of up to 84%. Up to half of stroke survivors experience post-stroke cognitive dysfunction. Compared with other ancestry populations, stroke among Indigenous Africans tends to occur at an earlier age and is more likely to be haemorrhagic or small vessel disease – ischaemic. Differences in stroke severity and outcomes have also been observed. Beyond social determinants of health, genetic factors might contribute to these disparities, more so given the unique and huge genetic diversity of the African genome. In this presentation, we will review recent progress on stroke and post stroke - cognitive impairment in Africa with respect to risk factors, phenotypes, outcomes, genomics, ethical, legal and social issues of stroke biobanking and priorities for stroke research, capacity building and services in Africa.

Why movement and thought are so often affected together?

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Although classical neurology draws a sharp distinction between movement disorders (MD) and cognitive disorders (CD) the truth is that they are fatefully jing-jang-like intertwined. For example, up to 80 percent of Parkinson's disease (PD) patients develop cognitive deficits. The causative mechanism of this interlacing is not clear - it may be due to overlapping pathology (α-synuclein, tau, Aβ) in anatomical structures which bridge thought, emotion and movement (particularly the loops of the striato-thalamo-frontal system and related brain-stem nuclei with relative sparing of the cerebral cortex). A prototypical MD-CD disorder is Huntington's disease; in old age, the most common dementias associated with movement disorders are Parkinson's disease, Parkinson's disease dementia, dementia with Lewy bodies, and corticobasal degeneration – however, additional factors, particularly depression, medications, or medical conditions are largely underestimated. Although cognitive deficits vary in different movement disorders, there is a rather specific profile of dementia in movement disorders, largely covered by the historical term of 'subcortical' dementia. Subcortical dementia is a clinical syndrome characterized by slowness of mental processing, forgetfulness, impaired cognition, apathy, and depression. First recognized in progressive supranuclear palsy and Huntington's disease, the concept has been extended to account for the intellectual impairment of Parkinson's disease, Wilson's disease, spinocerebellar degenerations, idiopathic basal ganglia calcification, the lacunar state, and the dementia syndrome of depression.

In the lecture we will touch on the functional anatomy to explain why thought-, emotion- and movement are so often affected together in most common movement disorders and we will outline how the cognitive impairments in these patients differ and what they have in common.

Cognitive function in Parkinson Disease in Africa: what we know and what we need to know

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Parkinson disease (PD) is recognized predominantly by the defining motor characteristics (bradykinesia, tremor, rigidity, and postural/gait dysfunction), but the non-motor manifestations including cognitive dysfunction are increasingly well recognized. Cognitive impairment is common in Parkinson's disease (PD) and comprises of a spectrum from mild cognitive impairment to PD dementia. The cognitive dysfunction consists of attentional, executive, visuospatial, and memory impairment, and contributes to disease burden characterized by higher morbidity, mortality and poorer health-related quality of life. The prevalence of PD dementia is high, and may affect up to three-quarters of persons with PD as the disease progresses. The risk factors for cognitive dysfunction in PD include older age, male gender, longer duration of disease, more severe motor disability, and the postural instability gait disorder (PIGD) motor phenotype. Diagnostic criteria for mild cognitive impairment (MCI) and dementia in PD have been published by the International Parkinson and Movement Disorder Society (MDS). PD associated cognitive dysfunction has been described in a few studies (predominantly hospital-based) focused on PD in Africa, and will be summarized in this presentation. The frequency and characteristics, relationship to disease-related characteristics such as motor phenotype and disease severity, identified risk factors, challenges in diagnosis and management and future prospects from the African perspective will be highlighted.

Lessons from genetics of movement disorders

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Technological advances in the past decades have resulted in a sea-change in our understanding of the genetic determinants of movement disorders that include Parkinson's disease (PD) spectrum, dystonia, cerebellar ataxia and hereditary spastic paraplegia. From early linkage-based discovery of autosomal inherited gene defects in the rare familial forms of disease to the population-wide approaches enabled by genome-wide, array-based and next-generation sequencing (NGS) technologies, myriad causative mutations and common genetic variants that contribute to disease risk have been uncovered.

Genetic factors range in influence from inherited coding mutations eg the a-synuclein (SNCA) gene in PD, or the trinucleotide expansions in Huntington's disease (HD) and the ataxias to variants with reduced penetrance such as the causative exon 5 CAG/(DGlu) deletion in TOR1A in dystonia (DYT1). At the other end of the spectrum, genome-wide association studies (GWAS) and NGS approaches with huge cohorts of cases are progressively uncovering common and rare genetic variants but with minor effect, and risk.

Autosomal inherited coding mutations directly inform us on the defective protein and its functional and pathological involvement. On the other hand, it is more challenging to interpret the contribution of risk variants emerging from GWAS and NGS studies that are often in non-coding (regulatory?) or intergenic regions, and if they functionally coalesce with common pathways implicated by the autosomal forms of these disorders.

To tackle this, recent large-scale systems biology approaches that integrate genomics data with tissue- and cell-specific gene expression, epigenetic and proteomics data are being used to isolate the cellular processes and functional and interaction networks that can be associated with the disease phenotype and provide better targets for study and therapeutic intervention. Such studies have, for example, shown that DYT genes, linked to DOPA-responsive dystonia are enriched in nigral dopaminergic neurons and involved in dopamine synthesis and metabolism and, GWAS-implicated genes in PD are enriched in biological pathways involved in chemical signalling, and stress response and lysosomal storage, endocytosis and vacuolar function.

Movement Disorders, Cognitive Function and Frailty in Senegal, West Africa

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Feasibility, Challenges, and opportunities for deploying Telemedicine in ADRD in LMICs: an African Viewpoint

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Background: Globally, Alzheimer's and other dementias constitute a major public health priority with negative social and economic impact. 150 million people are estimated to be living with Dementia by 2050(WHO) of whom 68% will be residing in low -middle income countries with extraordinarily little preparedness.
Our Challenges in Africa: Dementia is underdiagnosed, Prevalence ranges between 2.3% to 20%, incidence 13.3 per 1000 person-years. Incidence doubles for every 7.7-year increase in sub–Saharan Africa. Increase mortality risk with hazard ratio from 1.5 (95% CI:1.2-1.8) to 6.3(95% CI:1.0-3.5), stigmatization, poor awareness, skewed healthcare service distribution, poor healthcare infrastructure and lack of social and health policies.
Gaps and Future Direction: There is need for appropriate Diagnosis using cognitive and functional assessment that are culturally appropriate and are resistant to the differences due to effect of education and language, development of normative data across lifespan, training of healthcare workers and development of ubiquitous homebased application for diagnosis, care support, disease management and training
Future Direction: African Dementia Consortium collaborative study titled Recruitment and retention for Alzheimer's disease diversity Genetic Cohort in the Alzheimer's disease sequencing project (READD-ADSP) provides the opportunity to address the identified gap as earlier stated. There will be recruitment and retention.
Telemedicine will enhance penetration of non-reachable communities, improve psychometric /cognitive testing, aid early diagnosis of Dementia, family and care support and training of health workers to improve outcome
Conclusion: Telemedicine has proven to be a game changer in solving brain health challenges and has the capacity to revolutionize neurological disease outcomes.

PARKINSON'S DISEASE: ASSESSING NON-MOTOR SYMPTOMS AND THEIR ASSOCIATIONSWITH QUALITY OF LIFE AMONG PATIENTS IN KORLE-BU TEACHING HOSPITAL, GHANA

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Background: Management of patients with Parkinson's disease has classically focused on assessment and treatment of their motor symptoms but non-motor symptoms also cause significant morbidity and affect their quality of life. However, relatively few studies have been done to assess the burden of non-motor symptoms of Parkinson's disease in different populations and even less in Ghana. Systematic reviews of Parkinson's disease in Africa have identified the need for more research into its epidemiology and associations in the sub-Saharan region, especially since its prevalence is likely to rise as Africa sees an increase in its aged population.
Method: A cross-sectional hospital-based study involving 100 patients with Parkinson's disease who attend the adult neurology clinic of the Korle-Bu Teaching Hospital during a 9-month period (February - October2021). Using a self-administered questionnaire, demographic data, disease characteristics, presence ofnon-motor symptoms using the Non-Motor Symptoms Screening Questionnaire (NMSQuest), health-related quality of life using the Parkinson's Disease Questionnaire-8 (PDQ-8) and medical co-morbidities were assessed.
Result: This study found that 100% (n=100) of the patients recruited had at least one non-motor symptom. The most common non-motor symptoms were nocturia (70%), unexplained body pains (55%) and constipation (51%). The mean NMS Quest score for all patients was 9.66±4.81, which corresponds with a moderate to severe burden of non-motor symptoms. Mean NMSQuest scores were higher in patients with more advanced disease. However, there were no statistically significant differences between these group means as determined by one-way ANOVA. There was a weak positive correlation between NMSQuest score and H&Y stage. The median PDQ8 summary index (PDQ8-SI) score was 42.5% (IQR32.5 – 53.75). There was a moderate but statistically significant positive correlation between NMSQuest scores and PDQ8-SI with a modelled relationship on regression analysis ($a\beta$=1.76, $p<0.001$).
Conclusion: The burden of non-motor symptoms among Parkinson's disease patients who attend the adult neurology clinic of KBTH was moderate to severe, especially in patients with advanced disease. Non-motor symptoms were associated with worse health-related quality of life.

NIHR Global Health Research Group on Transforming Parkinson's Care in Africa (TraPCAf)

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The largest proportionate growth of people aged over 60 is occurring in low- and middle-income countries (LMICs), such as those in sub-Saharan Africa (SSA). Already coping with a large burden of infectious diseases they now face a large increase in age-related diseases such as dementia and Parkinson's disease (PD). There are very few medical specialists. Effective symptomatic drug treatment is available, though not a cure, but access is very limited in SSA. People undiagnosed, and others not treated, will have a much poorer quality of life and a markedly reduced life expectancy. We have treated people in SSA who were virtually bed bound and within days were back working on their farm. We showed similarly dramatic short-term impacts for a physiotherapy cueing intervention before drug treatment was available locally. There is poor awareness about PD among the general public and health professionals, so people often don't recognise symptoms or access medical help and, even when they do, may not be correctly diagnosed. Some PwP see traditional, or faith, healers and many seek no help at all, mistaking the symptoms for old age and feeling nothing can help. Even those diagnosed face the challenge of obtaining affordable and sustainable drug treatment. This research will enable us to gain invaluable information on the phenotype of PD and response to treatment in Africa. We will test ideas for aiding diagnosis and management, and develop support including patient and carer information. We will strengthen research capability in PD in Africa. We are linking with the Global Parkinson's Genetics Programme (GP2) investigating the genetics of PD worldwide, including Africa. We plan to work with colleagues in Tanzania, Kenya, Ghana, Nigeria, South Africa, Ethiopia and Egypt to: Improve Diagnosis: 1) Develop aids to diagnosis for non-specialist doctors, such as questionnaires appropriate for LMIC settings, and equipment that measures bradykinesia and tremor. We will utilise innovative techniques such as scripted videos recorded on smartphones and asynchronously analysed by movement disorder specialists in Africa, UK or Europe, and also investigate chemicals in blood, sweat and urine as early signs of PD. We will also collect stool samples for microbiome analyses; 2) Provide training for doctors, nurses and therapists to improve diagnosis and management. 3) Develop and trial services for diagnosis and management of PD by non-specialists; 4) Undertake community-based door to door prevalence studies in Tanzania, Ghana, Nigeria and Kenya, testing different screening measures.
Improve care: 1) Develop a database of PD outpatients in sites in the different countries with detailed phenotype, treatment response and outcome; 2) Look at the effectiveness and side-effects of preparations of Mucuna pruriens (MP), a tropical plant, compared to Levodopa (standard drug treatment) in Tanzania. Evidence from an on-going Ghana study suggests MP is affordable and effective with limited side-effects; 3) Assess the response to drug treatment, with non-invasive and low-cost home monitoring with wearable movement sensors in PwP who consent; 4) Work with patient and carer support groups to investigate the lived experiences, clarify priorities and raise public awareness via standard media techniques and social media; 5) Collaborate with the Investigators on GP2 to collect blood, saliva and stool samples for genetic analyses.

The implications of linguistic diversity for aphasia assessment & treatment

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Most of the current research on aphasia is based on observations of patients speaking English and a small number of closely related West European languages. Theories of aphasia, testing materials and treatment programmes derived from studies of monolingual English speakers are then assumed to be universally valid across the world.

This “egocentric universalism” is based more on monolingual ignorance of world’s languages and linguistic diversity than on empirical evidence. Even deeply ingrained diagnostic categories, such as Broca’s and Wernicke’s aphasia, are highly language-dependent and our understanding of them is limited by the small number of languages in which they were studied. Aphasia can manifest itself differently depending on patient’s language(s), requiring language-specific assessment and therapy. English is not a “neutral default language” and examples drawn from English can be completely inappropriate to address phenomena occurring in other languages. Moreover, the majority of world population is multilingual and so, multilingual aphasia needs to be considered as the rule rather than exception, raising important practical questions such as the most appropriate language(s) to be used for assessment and the inter-linguistic transferability of aphasia treatment.

This does not mean that research on one language is irrelevant to others. Many insights about aphasia are transferrable, but such transfer needs to be based on an understanding of linguistic typology, drawing its knowledge from a wide range of different world’s languages. The linguistic diversity of Africa and its high level of multilingualism could play a crucial role in the future of aphasiology.

The relevance of culture, acculturation, and bilingualism in the clinical diagnosis of Mild Cognitive Impairment and dementia among Latinos/Hispanics in the USA

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The relevance of culture in neurocognitive processes has gained increasing interest regarding the potential of culturally-related effects impacting cognitive performance. Neuropsychological assessments determine the presence and characterization of cognitive impairment in Alzheimer's Disease (AD) and other dementias. However, tests assessing cognitive abilities are particularly susceptible to the influence of culture. It has been proposed that performance in cognitive assessments is culture-specific because of sociocultural differences in: (1) values and meanings, (2) modes of knowing, and (3) conventions of communication. Acculturation and bilingualism are two cultural factors that have been shown to contribute to the diagnosis of dementia in Latino/Hispanic older individuals. Acculturation is the process by which immigrants adapt to the majority culture and potentially adopt its values and practices. It may be significantly associated with cognitive test performance, explicitly on tests relying more on verbal items. An acculturation-related factor is the level of education, which has been shown to influence neuropsychological test performance and impact the progression of AD. More recently, bilingualism has also been identified as a potential contributor to cognitive reserve in elderly individuals. Bilinguals could tolerate more significant neurodegeneration than monolinguals without obvious cognitive impairments. Engaging in constant cognitive control seems to increase the bilingual's inhibitory and switching mechanisms, resulting in advantages in other specific cognitive domains. The positive effect of bilingualism has been observed in executive function tasks, while negative effects have been reported on verbal fluency tests. Maintaining two languages active may modify cognitive and brain reserve among bilinguals, although this evidence has been inconsistent and contradictory. I will share findings from our 1Florida ADRC longitudinal study, investigating the relationship between bilingualism and acculturation and neuropsychological test performance in aging participants from South Florida. It is essential to consider the individual's culture and level of bilingualism to obtain an accurate assessment of cognitive impairment.

Developing a language specific tool for Primary progressive aphasia: Challenges in a diverse sociocultural and multilingual Indian context

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Background/Aims: Primary progressive aphasia (PPA) is a neurodegenerative condition of language networks characterised by speech and language impairment. Recognition of major PPA syndromes is important as it provides information about selective neural vulnerability in the degenerative brain, and has treatment implications. Three major forms- non-fluent variant (nfvPPA), semantic variant (svPPA) and logopenic variant (lvPPA) comprise the canonical syndromes recognized by current consensus criteria. However, these criteria mainly focus on patients who speak English. There is growing understanding that language structure and culture play a crucial role in manifestations of language deficits in different languages. In a linguistically and culturally diverse context that exists globally, it is essential to identify linguistic markers and validate language specific tools that can potentially aid in the diagnosis of PPA in the diverse linguistic contexts context. India is characterised by extensive linguistic diversity. In this study, we aimed to (1) study the language profiles in patients with PPA in India, and (2) identify linguistic features that may potentially characterise PPA subtypes in the Indian languages.

Methods: 50 patients with PPA (20 nfvPPA, 26 svPPA and 4 lv PPA) participated in this cross-sectional observational study. 52.7% were speakers of Indo-Aryan languages: Hindi and Bengali and 47.3% were speakers of Dravidian languages: Kannada, Telugu, Tamil and Malayalam. Bilingualism is common in India and 61.1% of our cohort were bilinguals. The challenge of addressing multiple languages in a clinical setting was overcome by using Indian language adapted versions of cognition and language tests. A novel test of evaluating syntax in Indian languages and semantic memory appropriate for Indian culture was developed. Detailed linguistic evaluation was done by an examiner proficient in the native language of the participant.

Results: Unique observations with respect to the language profiles of the patients with PPA were made. We found the existence of two subtypes within the nfvPPA group (a) associated with prominent Apraxia of speech (AOS) and b) with no associated AOS. Syntactic deficits could be identified only on tasks specifically developed for assessment of syntax in the Indian context. For those with lvPPA, the syntactic characteristics in spontaneous speech was similar to the type (b) of nfvPPA. But the syntactic deficits in this subtype of PPA was primarily due to deficits in working memory and not due to grammaticality deficits. Phonological errors and repetition deficits were also prominent in this subtype. For the svPPA subtype, the speech output was fluent with altered content. Paragrammatisms were identified on measures for assessment of syntax. Word comprehension and object knowledge remained affected with spared repetition skills.

Discussion/conclusion: The study highlights that a comprehensive assessment of language functions could be achieved with the use of language and culture specific assessment batteries. Novel tests of syntax and semantic memory were crucial in making a diagnosis of PPA subtype and identifying the nature of language impairment in the Indian context. The importance of case-markers and specific morphological structures in re-defining ‘agrammatism’ for diagnosis of PPA in Indian languages is emphasized.

Utility of WOrd FInding Disorders Test (WOFI) in dysnomia detection in early Alzheimer's Disease in a Naturalistic Clinical Setting.

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Background: Detecting dysnomia is valuable in diagnosing neurocognitive disorders. Most of dysnomia tests are based on visual stimuli and can be administered in face-to-face or online sessions. The recently designed 50-item WOrd FInding Disorders Test (WOFI) relies on auditory stimuli and can be administered over the phone. Nonetheless, its accuracy in detecting dysnomia in mild neurocognitive disorder (MiND) has not been thoroughly studied yet.
Objectives: Development of a shorter version of WOFI (WoFi-Brief) and comparison of their utility with the naming items of the Addenbrooke's cognitive examination III (ACE-III) in detecting dysnomia in MiND due to Alzheimer's disease.
Methods: The study included 102 cognitively intact individuals and 115 patients with early AD. WOFI was adapted to the Greek language without changing the original distribution of item word frequency. WOFI-Brief development was initially based on the exclusion of items with the same distribution pattern of correct vs. erroneous answers across the three groups. For the remaining items the Categorical Principal Components Analysis using Cramer's V Correlation was employed and for each one of the first k principal components (PC) the item with the largest loading was selected. Additional items were selected from each principal component, provided their loading was larger than the minimum of the maximum loading in the particular PC. Statistical analyses included proportional odds logistic regression models (POLR models). Repeated random subsampling (stratified bootstrap resampling) was used for recursive partitioning to training and validation set (70/30 ratio). The procedure was repeated 20,000 times and the results were then averaged over the splits.
Results: The analyses resulted in the 16-item WoFi-Brief. All studied instruments were significant predictors of diagnostic outcome, and WoFi-Brief was not inferior either to the original WOFI or to ACEIII dysnomia subtest in explaining variance. The average misclassification errors varied between 30 and 32%.
Conclusions: WoFi-Brief and WoFi embody excellent alternatives to visual stimuli based dysnomia tests. They may form pragmatic dysnomia assessment tools within the frames of large epidemiological studies and (follow-up) assessment of low digital literacy older adults who live in remote areas or suffer from mobility disabilities, undermining their access to face-to-face naming capacity assessments.

Spatial disorientation – a non-verbal approach towards cognitive assessment in preclinical and clinical dementia

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Spatial orientation is a key diagnostic factor for Alzheimer's disease but is rarely cognitive assessed in clinic. We have developed over the years multiple tests which reliably detect spatial disorientation in preclinical, prodromal and clinical Alzheimer's disease and associated dementias. These tests are now widely used across multi-centre, international studies, since spatial disorientation can be assessed non-verbally and is cross-culturally highly reliable. Further, educational levels seem to have less of an effect on spatial orientation assessments than classic memory assessments. In this talk I will present data on our spatial orientation tests to highlight how they could be potentially relevant for sub-Saharan African preclinical and clinical dementia populations in the future.

Spectrum of Frontotemporal Dementias

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KEYNOTE: How Neuroscience Can Inform Public Policy: A new agenda on human development

Facundo Manes

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Behavioral science in the public sphere has come a long way since the publication of *Nudge* by Thaler and Sunstein. Before then, policymakers were primarily economists, lawyers, and financial experts. Now, behavioral scientists are sometimes part of government structures and design interventions drawing on the existence of cognitive biases and the importance of social determinants of human behavior. This approach -known as *behavioral insights* - has proved to be successful in diverse areas such as taxation, energy, and health policy at a minimum cost. Here, I will argue that neurosciences - including cognitive, social and affective neurosciences - that have gained considerable insight into human development could inform public policies in different ways that are especially relevant for the new challenging global scenario triggered by the COVID-19 pandemic. New and old issues will be of major concern once COVID-19's acute crisis finishes, which would require a profound knowledge of brain functioning to complement current public policy and move them onto a renewed level of complexity. Reducing inequalities, adapting to rapid change, and expanding brain health in face of adversities are major future challenges for human development. Neurosciences could inspire more precise and targeted interventions for increasing the "mental wealth of nations". I foresee a future where neuroscientists play a more significant role in the design of evidence-based policies for these matters. However, for doing so, both a new insight about the relevance of brain capital and a supportive strategy by leaders and stakeholders will be needed to harvest its valuable social and economic benefits.

AUTOSOMAL DOMINANT ALZHEIMER DISEASE IN COLOMBIA

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Alzheimer's disease is a continuum of events that take place over several decades, beginning from when the individual is asymptomatic; moving to silent, pre-clinical neuropathological changes that can take place over decades; followed by the appearance of mild cognitive impairment or amnesia stage; and finally ending in the dementia stage.

The preclinical stage can also be subdivided into stages. This has been done with the genetic form of Alzheimer's disease caused by the paisa mutation (E280A in PS1). This mutation affects 25 multigenerational families in a mendelian form, which represent the largest such population group in the world and consist of more than 6,000 inheritors and 1,2000 carriers. Phase 0 of this form of the disease is the period between birth and the age of 24, when abnormally high levels of pTau217 and neurofilament light chain (NfL) are detected in plasma, as well as Aß42 -amyloid in cerebrospinal fluid. Phase 1 runs from 24 to 28 years of age, when amyloid-positive starts to be detected in the PET-amyloid image. Phase 2, from 28 to 32 years of age, is when a significant reduction in memory scores on the 10-word CERAD list starts to be detected in completely asymptomatic people without memory complaints. In stage 3, from 32 to 38 years of age, positive signs of tauopathy appear in the PET-TAU image, and subjective memory loss without impact occurs. Finally, in phase 4, from 38 to 44 years of age, memory complaints with impact and mild cognitive impairment appear.

We have studied a woman who carried both a causative mutation for Alzheimer's and a preventative mutation, delaying the onset of the disease for almost three decades. This patient, as a carrier of mutation E280A in PS1, would normally be condemned to the onset of symptoms of memory loss at the age of 44 and dementia at 49; however, she was homozygote for the Christchurch mutation (R136S) in ApoE3, which caused the onset of mild cognitive impairment to be delayed to age 72. She had massive amyloidosis, low levels of tauopathy, and mild neurodegeneration. The effect of the protector mutation in weakening the ApoE-HSPG bond and reducing the dissemination of the TAU protein could have therapeutic potential.

A Multiomic Examination of Alzheimer's Disease in Special High and Low Risk Cohorts

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Alzheimer's Disease (AD) is a complex aging trait involving multiple genetic and environmental factors and their interactions. To optimize our understanding of the network of relations or causations, we used special cohorts based on extreme sampling. By examining these special populations, we identify additional loci that may interact with the primary genetic risk factors, PSEN1 or APP. Specifically, we highlight three special populations, namely carrier families of the PSEN1-G206A mutation in Puerto Ricans, adults with Down Syndrome (ABC-DS), and families with familial longevity from the Long Life Family Study (LLFS). The first two cohorts will allow us to search for protective genetic (and environmental) factors against AD by examining those who are old yet not demented. The last cohort allows us to confirm the findings from the first two cohorts to see whether or not the protective alleles identified from the high-risk cohort(s) are more frequent and their effect size stronger in the low risk cohort. We then apply multi-omic approaches to further dissect AD neurodegenerative pathways to understand their functional relevance. The directionality of our analytical approach can be reversed from the low risk to the high-risk cohorts. As an example, we will discuss our examination of lipidomic and genomic evidence toward AD in LLFS and DS cohort. Using 188 targeted lipids obtained from our LLFS, we identified 10 lipids that are associated with AD and genetic analysis of these 10 lipids yielded three loci – 4p12, 11q12.2 and 15q21.3 -- that were associated with AD in the healthy aging cohort. We subsequently confirmed 15q21.3 in our DS cohort with multiomic data. Here, we show how our approach to extreme sampling contributed to molecular characterization of AD.

Risk effect of APOE gene in persons living with Alzheimer Disease in Ibadan.

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Genetic studies help to unravel contributions of genes to illnesses and may help in drug development. The Ibadan arm of the Indianapolis-Ibadan Dementia Research participated in whole genome sequencing (WGS) of individuals diagnosed with Alzheimer Disease (AD) and cognitively normal controls and 2 important observations were made. The risk effect of ApoE and ABCA7 was examine and ApoE was significantly associated with AD (rs429354 odds Ratio 1.6 CI 1.2-24. Pv-0.027) but the effect size was substantially lower than the effect size found in European population (Odds ratio 3.32 CI 3.20-3.45 pv= 2 x 10-881. We also observed that comparing Ibadan data with data sets of African American, Non - Hispanic White and Puerto Rican individuals. ApoE4 in African Ancestry had lower risk for developing AD. The possession of rs10423769_A allele reduces Odds Ratio for AD risk from 7.2 for ApoEϵ4ϵ4 carriers without the A allele to 2.1 for ApoEϵ4ϵ4 carriers with at least one A allele. The initial observation in epidemiologic studies that ApoE4 allele has a lower risk for developing AD in individuals of African descent is supported by our finding and thus calls for more research. Currently WGS is rare in African population and frontiers of science will be advanced with further studies

Knowledge and Attitudes towards Dementia and Dementia Genetics among Geriatric Clinic Attendees at University College Hospital, Ibadan, Nigeria

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Background: Ageing remains the greatest known risk factor for dementia. In addition, there exist key genetic mutations which significantly increase the risk of Alzheimer's disease and other dementias. The burden of dementia in Nigeria has more than quadrupled over the past 2 decades and a further increase is expected. Across Africa, only a few studies have examined knowledge and attitudes towards dementia in the elderly. None have assessed the knowledge of the elderly about dementia genetics or willingness to undergo genetic testing.
Method: Study participants were recruited among geriatric clinic attendees (aged ≥60 years) at the University College Hospital, Ibadan. Dementia knowledge was assessed using the Dementia Knowledge Assessment Scale (DKAS). DKAS score of ≥26 was considered good knowledge (maximum score = 50). We also assessed respondents' knowledge of dementia genetics, attitudes towards dementia and willingness to undergo genetic testing for dementia risk assessment.
Result: The sociodemographic and clinical characteristics of 100 respondents are described in Tables 1 and 2 respectively. Mean (±SD) DKAS score was 8.87 (±10.84). Only 10% had good knowledge of dementia. Of the 42 participants who claimed to know what dementia is, 32 (76.2%) were assessed to have poor knowledge (DKAS < 26). Fifty-two participants had a good attitude towards people with dementia. Attitude was associated with participants' level of education, family history of dementia and having a friend with dementia (Table 3). Thirty-three participants believed that dementia is inheritable. None of the 21 participants who agreed that certain genes are associated with dementia could identify/name a risk gene. Majority (70%) expressed willingness to undergo genetic testing to assess their risk of dementia.
Conclusion: There was poor knowledge of dementia and dementia genetics among most respondents but most had a good attitude. There is a need for concerted efforts to increase awareness of dementia, especially among the elderly – which represent the at-risk population – so as to increase early detection, good health seeking behaviours and improved prognoses/outcomes. The proportion of respondents willing to undergo genetic testing is encouraging, especially in light of recent efforts to change the narrative surrounding Africa's underrepresentation in genomic research.

TREM2 SIGNALLING IN MICROGLIA AS A GENETICALLY DEFINED THERAPEUTIC TARGET

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AD associated genetic variants have been found in the triggering receptor expressed in myeloid cells 2 (TREM2), phospholipase C gamma 2 (PLCG2), Abl Interactor member 3 (ABI3), MS4A4 amongst others. We show here that Aβ oligomers, but not Aβ monomers, bind to TREM2 with nanomolar affinity, and induce Aβ-dose-dependent shedding of TREM2 ectodomain, DAP12, SYK, PLCG2, and ABI3 phosphorylation. We show that this cascade promotes microglial migration and phagocytosis of membrane debris Similar effects are induced by anti-TREM2 antibodies. We propose that these intracellular signalling pathway changes activate protective microglial mechanisms, and the AD related variants affect these mechanisms. In addition, we show that the shed soluble sTREM also has protective effects, inhibiting Aβ oligomer formation, disrupting preformed Aβ oligomers and reducing Aβ-induced neurotoxicity. Crucially, R47H sTREM2 failed to disrupt Aβ oligomerization, and in fact encouraged larger more neurotoxic oligomers. sTREM2 and TREM2 signalling pathways represent potential therapeutic targets.

Functional Studies towards identifying the protective loci in the African Local Ancestry

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We are utilizing the differences in the regulatory architecture between the African, European and Amerindian genomes to identify protective loci for AD. We have identified a new protective locus for *ApoE4* that only occurs in individuals with African local ancestry, reducing by 75% the risk of *ApoE4* homozygotes for Alzheimers Disease (AD) (Rajabli et al, 2022). These studies were done using multiple sources including samples collected through the University of Ibadan, Nigeria.

Further, it has been shown that African Americans and African carriers of the *ApoE4* allele have a reduced risk for AD compared to European and Asian carriers of the allele. This protective factor has been shown to be associated and located in the African local ancestry surrounding the *ApoE* gene (Rajabli et al, 2018). We applied sequencing techniques to examine the gene expression at the cell level (measuring expression in one single cell at a time) to examine potential differences in the frontal cortex between *ApoE4* homozygotes of either African or European local ancestry. We found that Europeans have a significantly greater expression of the *ApoE4* allele than the African local ancestry (Griswold et al, 2021). We have followed up with experiments demonstrating that the European genomic structure is more accessibile to the factors controlling gene expression at the *ApoE4* locus, and thus likely helps explain the increased gene expression of *ApoE4* in European carriers of the allele.

Lifetime modifiable risks for dementia in different cultures

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There has been a hugely welcome reduction in risk for dementia in some High-Income Countries. However this has been restricted to those of higher income and more educated people. We have less information in some other countries, but it appears there is an increase in East Asian countries.

The first Lancet commission using worldwide figures found the estimated Population attributable fraction of 9 risk factors for dementia was 33%. Therefore, there was a potential reduction in the number of people with dementia of one third if these risks could be eliminated. These figures used all data available – which means that 80% was from white populations in high income countries.

Considering the same risks using the 10/66 cross -sectional data we calculated that in most countries in Latin America the PAF is 56%, India 41% and China 40% -with more contribution from lack of education and hypertension and less from social isolation.

The 2020 commission found a theoretical potential reduction worldwide of 40%. Since then, we have studied different ethnic groups in New Zealand and found Maori and Pacific peoples had a PAF of 51% - with a particularly high contribution from obesity and hearing loss. We have also examined dementia in different ethnic groups in Australia and in high- and low-income groups in Brazil. I will present these results.

Overall, our findings make it clear that risk is not the same for everyone and therefore interventions have to be tailored for country, culture and individual . Overall, groups who are underserved need the changes most and will derive the highest benefit

Prevalence of Common Mental Disorders (Depression and Anxiety), Dementia and Disability among community residing people aged ≥60 in Nepal.

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Background: Currently there are no community level prevalence data for dementia or common mental disorders in older people in Nepal. This study was conducted to estimate the prevalence of Common Mental Disorders (Depression and Anxiety), Dementia and Disability in people aged ≥60years.

Methods: This was a one-stage house to house cross-sectional epidemiological survey of all individuals aged ≥60 years in two wards of Dharan Sub Metropolitan City, Nepal. Due to COVID-19 restrictions, confirmatory second stage assessment was not possible and prevalence was reported by screening measures. Measures used were Informant Questionnaire on Cognitive Decline (IQCODE), Brief Community Screening Instrument for dementia (CSI-D), Generalized Anxiety Disorder (GAD)-7 Scale, Geriatric Depression Scale (GDS)-15, Everyday Ability Scale (EASI) and Barthel index. Data were collected by trained nurses December 2021 to March 2022 using Kobo toolbox software and analyzed using SPSS-16. Ethical clearance was obtained from the Nepal Health Research Council.

Results: A total of 1009 (588 females) were enrolled in the study. The prevalence of dementia were 8.8% and 10.7% by Brief-CSID and IQ-CODE respectively. The prevalence of depression and anxiety were 13.6% and 12.1% respectively. Functional impairment (EASI score ≥5) was present in 4.9%, and 19.5% had moderate disability by Barthel index. In bivariate analyses, dementia was more frequent in ≥75 age group (OR 2.8[95% CI 1.9- 4.5]; p<0.001), having physical illness (OR 2.3[95%CI 1.3-3.9]; p=0.003), having hearing impairment (OR 1.9[95%CI 1.2-3.0]; p=0.004), and visual impairment (OR 1.9[95%CI 1.0-3.2]; p=0.023).

Conclusion: The study showed the prevalence of dementia, common mental disorders and disability is high in older adults in Nepal. Sensory impairments may be a modifiable risk factor in this population.

Keywords: Common Mental Disorders, Dementia, Nepal, Old age

Alzheimer's disease in the Ugandan community: Detection and validity of diagnosis

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Background: More than two-thirds of people with dementia are estimated to live in low-and middle-income countries. Assessment for cognitive impairment in Sub Saharan Africa mainly relies on instruments developed in the Western setting, many of which have not been validated in the local settings. We set out to determine the prevalence's of AD among community dwelling older persons in Uganda.

Methods: The older persons were identified in their homes from 23 villages in rural and urban Wakiso District, with the help of Village Health Team officers and research assistants. Participants were interviewed for 1-11/2 hours using Open Data Kit (ODK) forms installed on Samsung tablets. The 10/66 dementia tool was administered for detection of dementia and later a clinician's evaluation conducted for the confirmation of the diagnosis. Descriptive statistics, bivariate and multivariable analyses were conducted SPSS version 16.0. Statistical significance was set at $p<0.05$.

Results: We enrolled 500 participants with an age range of 60-101 years; mean (SD) 71.4 (8.7) years, though the men were older, mean (SD) 73.7 (10.3); 344 (68.8%) were women. Two-thirds lived in the rural area while one third were urban dwellers. The mean age of education was 7 years. Dementia was detected in 34% of the participants on the 10/66. On a subset of 208 participants evaluated later by the psychiatrist, AD was detected in a quarter of the sample. Increasing age, female, gender and low education were associated with the AD.

Conclusion: While estimates for dementia are high in community dwelling elderly, there is need to develop and adapt locally appropriate instruments for the detection of the disorder in order to correctly identify individuals and modify factors to lessen the burden of disease.

High Blood Pressure and Late Dementia

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High blood pressure is the most important risk factor for morbimortality in the world. In the last decades we are watching a decrease of the burden of the blood pressure in the high-income countries while, at the same time, this burden increases in sub–Saharan Africa. Nowadays the highest prevalence of hypertension in the world is in this continent. But probably more important than this raise in prevalence are the extremely low levels of awareness, treatment and control. To aggravate this situation, and looking for the total number of hypertensive patients, while in developed countries this number has been stable for the last 30 years it has almost triplicate in the same time in Africa, not only due to the increase in the prevalence but mainly to the increase of the population. With an health system that is mainly prepared to face communicable disease this high burden of hypertension has catastrophic consequences.

One of these consequences is the increased risk of dementia. It is now widely accepted that there is a strong relationship between hypertension and late cognitive impairment. This relationship is more important when the development of hypertension starts in middle life and the earlier it happens the higher is this relation.

If this relationship is generally accepted, it has also been demonstrated that a good control of the blood pressure decreases this consequence. Some late metanalysis have also demonstrated that this is dependent on the class of antihypertensive drugs used. Calcium channel blockers and blockers of the type one receptor of the angiotensin two seems to be more effective.

Taking all this in account it is extremely important for our continent to increase the levels of literacy and awareness of high blood pressure to decrease the expected burden of cognitive impairment in our future.

ASSESSING COGNITION FUNCTION IN DIABETICS IN BUKAVU, DRC

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Background: The prevalence of dementia, and more broadly cognitive impairment, is increasing. In 2009, it was estimated at about 35.6 million people worldwide, and this figure is expected to double every 20 years. (1) . Prevalence of dementia and cognitive impairment in sub-Saharan Africa varies widely. The prevalence of cognitive impairment ranged from 6.3%, in Nigeria, to 25%, in the Central African Republic. Vascular risk factors for dementia and cognitive impairment include history of hyperintentions, diabetes mellitus Type 2 (DM2) and hyperlipidemia. To our knowledge, there are no published data on dementia or cognitive impairment in the Democratic Republic of Congo (DRC). we are currently conducting a prospective longitudinal study on cognitive assessment in one of DRC's foci with diabetics seen at the panzi General Referral Hospital in Bukavu.

Methods and Challenges: In this case-control study we propose to follow up 300 cases with established DM2 (blood sugar : > 126 mg/dl; > 7mmol/l, twice or occasional blood sugar 11.1 mmol/l) over the age of 60 years. In order to overcome challenges due to high rate of illiterate among diabetic patients attending Panzi general Hospital the "The Community Screening Instrument for Dementia (CSI-D)" was translated in Swahili which would be a better tool to conduct the study. A hundred DM2 patients (age mean: 66 years; glucose mean: 18.8 mmol/l) were already been enrolled so far. In order to propose a research tool adapted to the patients, we first trialled a dozen patients to identify the difficulties that should help us make this tool easy to administer in our context. The challenges to be overcome were language – Swahili spoken in Kenya and Tanzania versus that used in Bukavu town-, and strategies to be used to assess praxis and cognitive functions in relation to the frontal lobe.

Interpretation:

We surmise that one of the obstacles in assessment of cognitive function in DRC could be the lack of adapted tools translated into local languages. It is important to create appropriate tools for different context.

The interactions of diet and the microbiome and the modifiable risk factors for Alzheimer's disease

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Potentially modifiable risk factors for Alzheimer's disease (AD) include hypertension, head injury, high fat diet, smoking, alcohol abuse, depression, diabetes, lack of physical activity, lack of mental demands at work and during recreational activities, low level education, obesity, poor sleep, frailty, atrial fibrillation, sleep apnea, and congestive heart failure. It is estimated that as many as 33-50% of patients worldwide with AD may be attributable to these risk factors.

The contribution of the microbiome to the interactions of modifiable risk factors and Alzheimer's risk has not been widely considered. We are all home to a diverse community of microbes, referred to as the microbiota, who play important roles in our metabolism and immunity. Alterations in microbial populations have been described in AD and related disorders and the influence of the microbiota on disease phenotypes have been documented in studies of Alzheimer model transgenic mice. Furthermore, my colleagues and I have described the specific molecular mechanisms by which bacterial products in the gut can contribute to the AD process in the brain.

The microbiota are our largest environmental exposure. The nature of microbial communities is dependent in large part upon diet. Diets high in saturated fats and lower in fiber produce microbial communities that enhance the production of inflammatory immune cells. Diets lower in saturated fats and higher in fiber enhance the growth of bacterial populations that produce short chain fatty acids which epigenetically enhance the production of tolerance inducing Treg cells. Through these mechanisms diet can influence inflammation throughout the body, including the brain.

It has been reported that the risk of dementia in Africa has been lower than that in high income countries, and that the risk is increasing. The influence of the diet on the microbiota may very well be involved in these changes in disease risk.

Dementia prevalence in different areas in Indonesia, risk factors and interventions

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Dementia prevalence was suggested to be as high as 33% in those over 60 in some areas in Indonesia according to recent studies. This estimate does not compare to other countries and could be related to oversensitivity- and/or inadequate cross-cultural validity of the type of cognitive screening assessments used. However, in the studies reviewed, risk and protective factors for dementia were remarkably consistent. These included an older age, having obtained low education, not having a job and being of the female gender. Health related factors included having had a stroke and being underweight, and not eating fruit. Finally, having low life satisfaction, dependency and a lack of engagement in psychosocial community-based activities including exercise had independent associations with dementia risk. Reverse causality could play a role (e.g. not engaging in activities because you are no longer able to, having low life satisfaction because of effects of dementia etc). However, meta-analyses and our own randomised controlled studies (RCT) have shown that resistance band- and multicomponent (physical and cognitive stimulating) exercises in particular- can reduce dementia and frailty symptoms. Cognitive stimulation therapy has also shown benefits, especially in groups and is being investigated in Indonesia by Prof Turana's group. Lastly, consumption of tempe, a fermented soy bean, has shown benefits in reducing dementia risk but also improving cognition in Indonesian RCT. Several cohort studies in Indonesia found that women were more likely not to have had further education or to have jobs at an older age and to be dependent on their children. Focusing on good education for girls to support active ageing is thus crucial governmental policy

Prevalence and Risk Factors of Dementia among People of 70 years and over in Kintampo, Rural Ghana

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Background: As populations across sub-Saharan Africa (SSA) continue to age, the number of people living with dementia is expected to significantly increase. However, no population-based studies on dementia has been undertaken in Ghana though it has one of the largest older populations in the region. We therefore ascertained the prevalence of dementia in the Kintampo Health Demographic Surveillance Site (KHDSS) in rural Ghana.
Methods: A one-phase cross-sectional population-based survey was carried out in 2015. Older people aged 70 years and over, and their key informants, were interviewed using a structured questionnaire and the 10/66 DRG short dementia diagnostic schedule assessment tool. The age- and sex-specific prevalence of dementia, and its 95% confidence interval, was estimated.

Results: A total of 761 participants were interviewed. The response rate achieved was 84.6 %. Following the assessment, 38 people were identified with probable dementia, resulting in an overall prevalence of 5.0 % (95 % CI 3.6-6.8). The standardised prevalence for all ages was 6.6 % (95 % CI: 3.6-6.8). Dementia was associated with increasing age and more prevalent in women (6.8 %; 95 % CI 4.7-10.0) than in men (3.3 %; 95 % CI 1.9-5.5).
Conclusion: As the first population-based study in Ghana, the prevalence estimate will provide the basis to create dementia awareness and pave the way for action by stakeholders. Further studies on ageing, dementia and the socio-cultural context in Ghana are required to have a better understanding of the impact of the demographic and epidemiological transition in this country.

Eyes, ears and mind: Sensory-Cognitive Health in Older People

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Aging-related hearing and vision impairments are among the most common and disabling comorbidities in dementia, yet management strategies and specific interventions focusing on people with either dual- or triple-comorbidities, are limited. These concurrent problems in people with dementia (PwD) are associated with poorer outcomes including a more rapid trajectory of decline, functional impairment, carer burden and neuropsychiatric symptoms. Improving sensory function may be an accessible and cost-effective means of improving quality of life (QoL) and other outcomes for people with dementia.
Part of the EU-funded SENSE-Cog research program (www.sense-cog.eu), the outcomes of a multi-step intervention development programme for a novel cross-national intervention to support hearing and vision for people with dementia in community settings will be described. This intervention has been trialled in eight centres across Europe and adapted for settings in South Asia (SENSE-Cog Asia). Additionally, findings of a wide-ranging KAP (Knowledge, Awareness and Practice) survey of care home staff in England regarding sensory-cognitive health of residents will be presented. This is the foundation for a new feasibility study of the SENSE-Cog intervention in care home settings (*SENSE-Cog Care*) in Ireland, based on the 'Sensory-cognitive Model of Place'.

Key references: Please provide 1-5 key references (APA format preferred)**; Please see:** https://www.sense-cog.eu/

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Modifiable Risk Factors for Dementia: Role of Diet, Sleep, Physical Activity and Social Networks

Sudha Seshadri

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A wide range of potentially modifiable behavior related factors have been associated with the risk of cognitive impairment and dementia. These 'so-called' lifestyle factors include diet, sleep, physical activity and social and cognitive engagement with family, friends and communities. Observational studies implicate each of these factors but there are many caveats. The majority of early studies were in high-income countries among persons of European descent (for example, in the Framingham Heart Study, the Whitehall Study) and were observational studies. Hence whether these factors are causal, or the apparent association is merely a result of bias or confounding, remains controversial. Also, the ideal diet, sleep or activity prescriptions may differ for optimal cardiac versus brain health, may vary between individuals and at different times in the life span of an individual. The biological basis for the associations between these factors and cognition are now being uncovered through blood biomarker, multi-omics and imaging studies and novel analytic methods such as Mendelian randomization. Targeted or multimodal interventional trials such as WW FINGERS are ongoing. We also recognize that economic, educational, social disparities and policy interventions can impact these lifestyle factors, for example access to healthy food and neighborhood noise and safety, strength of family and socio-cultural safety nets. This talk will explore what is currently known and attempt to identify key knowledge gaps that need to be addressed.

A role of Streptococcus mutans in intracerebral hemorrhage --a potential target of preventive interventions--

Masafumi Ihara

National Cerebral and Cardiovascular Center

The importance of oral hygiene in cardiovascular diseases, including lifestyle-related diseases and stroke, has been reported in several large-scale epidemiological studies. We recently found that harboring Streptococcus mutans expressing collagen-binding protein Cnm in the oral cavity was independently associated with a higher number of cerebral microbleeds, hemorrhagic stroke and cognitive impairment. One of the plausible mechanisms is that the Cnm-positive Streptococcus mutans can invade systemic circulation and attach exposed collagenous tissue in the cerebral vessels, thereby inducing local inflammation and blood-brain-barrier disruption. Another mechanism proposed by our microbiome analysis in stroke patients was gut microbial oralization mediated by specific oral bacteria, where the gut and salivary microbial composition shifted closer compared to those of the non-stroke subjects. Thus, oral commensal bacteria may contribute to stroke and dementia in two pathways: 1) by directly reaching cerebral blood vessels through systemic circulation and inducing blood-brain barrier disruption and 2) ectopically translocating into the gastrointestinal tract and inducing gut dysbiosis and possibly immune derangement. Therefore, reducing oral commensal bacteria such as Cnm-positive Streptococcus mutans and other pathogenic bacteria may serve as a novel therapeutic approach for stroke and dementia. In collaboration with the Pharma Foods International Corporation (Kyoto, Japan), we are developing toothpaste containing IgY antibodies against Streptococcus mutans and other specific pathogenic bacteria, and plan to start a clinical trial for prevention of hemorrhagic stroke and dementia.

Association between depression, anxiety, and dementia among older people in Central Africa: EPIDEMCA population-based study.

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Background: Mental health issues such as depression and anxiety are common in older people. Yet, in sub-Saharan Africa, there is limited evidence on their co-presence and/or involvement in dementia. In this study, we investigated the cross-sectional and longitudinal association between depression, anxiety and dementia among older people living in two Central Africa countries.

Methods: Participants were from EPIDEMCA study, a multicenter cross-sectional study conducted between 2011 and 2012 in Republic of Congo (ROC) and in Central African Republic among people aged ≥65 years. An annual follow-up was performed only in ROC until 2015. Data were collected using a standardized questionnaire and participants underwent a short physical examination. Dementia diagnosis was performed by a neurologist according to DSM-IV criteria. Depression and anxiety symptoms were collected at baseline and were ascertained using a community version of the Geriatric Mental State (GMS-B3). Probable cases were defined as having a GMS-AGECAT score ≥3. Cross-sectional and longitudinal associations were investigated using logistic and Cox delayed entry (with age as the time scale) regression models, respectively.

Results: Sample for cross-sectional analyses was 1773 participants (median age: 72 [interquartile range: 67-77] years) and 1053 (59.4%) were female. In total, 650 (36.7%), 133 (7.5%) participants presented respectively depression and anxiety symptoms, and 135 (7.6%) participants were diagnosed with dementia. After accounting for several covariates, depression significantly increased the odds of dementia (adjusted Odds Ratio= 1.72; 95%CI: 1.10-2.69). However, the association with incident dementia was no longer significant after accounting for residence area (adjusted Hazard Ratio= 2.24; 95%CI: 1.05-4.78 vs. aHR= 1.99; 95%CI: 0.92- 4.31). Regarding anxiety, it was not associated with either prevalent (aOR= 0.76; 95%CI: 0.38- 1.54) or incident dementia (aHR= 1.00; 95%CI: 0.32-3.17).

Conclusions: Depression seems to be an independent determinant of dementia in older people in Central Africa and many of them experience this condition more than anxiety. Therefore, promoting and strengthening social support around depressive older people could help to delay or manage dementia in this population.

Keywords: Depression, anxiety, dementia, epidemiology, sub-Saharan Africa. Words: /

A Multi-National Collaboration to Assess the Feasibility and Sustainability of Implementing Multimodal Brain Health Promotion Strategies in Sub-Saharan Africa (The WWFINGERS-AFRICA Project)

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Background: Multi-modal interventions targeting modifiable disease-associated risk factors may support large-scale population brain health. The landmark Finnish-Geriatric-Intervention-Study-to-Prevent-Cognitive-Impairment-and-Disability (FINGER) demonstrated improvements in cognition and health outcomes 2-years post-intervention. Researchers now seek to adapt and implement this approach internationally, within the World-Wide FINGERS (WW-FINGERS) network.
Dementia prevalence in Africa is rising; however, scant research examines the impact of lifestyle factor changes on dementia risk in African populations. Furthermore, no interventional studies have assessed the feasibility or efficacy of culturally sensitive risk-reduction approaches. Overcoming these gaps, our multi-national collaboration with established rural and urban cohorts in Nigeria, Kenya, South Africa and Democratic Republic of Congo (DRC), will leverage expertise from WW-FINGERS and Global-Brain-Health-Institute (GBHI) partners alongside the Global-Dementia-Prevention-Program (GloDePP) platform.
Method: The **WWFINGERS-AFRICA** study will recruit older adults at risk of cognitive impairment based on a well-validated dementia risk score. The adapted interventions comprise physical/social activity,

healthy diet, cognitive stimulation and vascular risk monitoring. Initially, we externally validated six existing dementia risk scores using data from the Ibadan cohort of the Indianapolis-Ibadan-Dementia study (1992-2022, n=4353). We examined the association between common dementia risk factors, validated risk scores and time to incident dementia or cognitive impairment. Sex-specific interactions were further investigated.
Result: 7% of the cohort developed dementia (mean±SD follow-up: 7±4 years). Of the risk factors studied, older age (HR:1.09, 95%CI:1.07-1.10), higher systolic blood pressure (HR:1.01, 95%CI:1.00-1.02), history of stroke (HR:3.06, 95%CI:1.44-6.48), smoking (HR:1.41, 95%CI:1.10-1.99) and lower social engagement (HR:4.11, 95%CI: 1.90-8.89) were associated with higher dementia risk; while being male (HR:0.49, 95%CI: 0.36 - 0.67) was associated with lower risk. The best predictive models included lifestyle and vascular-based dementia risk scores including ethnicity. Sex-specific diagnostic accuracy for predicting incident dementia and cognitive impairment will be presented.
Conclusion: Our preliminary independent validation of Western-derived dementia risk scores in a rural Nigeria cohort provides a cursory estimation of the proportion of elders who may meet the planned study's eligibility criteria in terms of at-risk-for-dementia status. The next step will explore facilitators/barriers to adherence and sustainability of the intervention in Nigeria, Kenya, South Africa and DRC via stakeholder focus-groups, to inform development of the intervention protocol.

Current challenges in identification of HIV-associated neurocognitive disorders (HAND), an overview

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A high proportion of people living and ageing with treated HIV in both high and low-middle income settings meet criteria for HIV-associated Neurocognitive Disorders (HAND).

Since the majority of people living with HIV live in sub-Saharan Africa (SSA), SSA is disproportionately burdened by HAND. Despite this, HAND prevalence estimates vary greatly in SSA and elsewhere , and data synthesis is challenging with systematic reviews of prevalence demonstrating high heterogeneity. Challenges in measurement and identification of HAND appear to be a major cause of these issues. Similarly, the population of people living with HIV is ageing, and both ageing and comorbidities may affect the observed phenotype of HAND in the post CART era.

I will give a broad overview of the current challenges in this area in terms of measurement/assessment tools and changes in observed phenotype of HAND in individuals ageing with HIV, focusing on SSA. I will also compare this with the situation in cognitive impairments associated with the long COVID syndrome, with the results of a recent systematic review. I'll finish with some thoughts, questions and challenges on the way forward, some of which will be addressed by our session speakers.

Cognitive performance in people with HIV living in a peri-urban community in Cape Town South Africa: Determining impairment and the role of psychosocial factors

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Background: Numerous studies report that cognitive impairment is highly prevalent in people with HIV (PWH). Recently, a significant concern for the literature is that research criteria defining HIV-associated cognitive impairment may be inaccurate. Accurate definitions require consideration of how impairment is defined using a neuropsychological assessment and the contribution of non-HIV factors to cognitive test performance. In South African samples of PWH, I investigated (1) the efficacy of currently used neuropsychology criteria for defining HIV-associated cognitive impairment and (2) the HIV and non-HIV factors associated with cognitive performance. These aims were explored in two different studies as part of my doctoral research.
Method: *Study 1:* Participants (*N* = 148) completed a neuropsychological assessment and a 3T structural MRI and diffusion tensor imaging session. I applied 20 different published quantitative methods of defining cognitive impairment to neuropsychological data to determine the proportion of participants classified as cognitively impairment according to each method. Logistic regression models investigated associations between cognitive impairment as defined by each method, and HIV-related neuroimaging abnormalities. *Study 2:* A sample of PWH and comorbid major depressive disorder (*N* = 105) completed neuropsychological, psychiatric, and sociodemographic assessments. Univariate and multivariate regression models investigated the contribution of sociodemographic, psychosocial, medical (including HIV-disease factors) and psychiatric variables to cognitive performance.
Result: *Study 1*: Findings showed marked variation in rates of cognitive impairment (20–97%) depending on the method used to define impairment, and that none accurately reflected neuroimaging markers of HIV-associated brain injury. *Study 2*: Analyses suggested that less education and greater food insecurity were the strongest predictors of poor global cognitive performance.
Conclusion: The results showed that non-biological, mainly psychosocial factors, were stronger predictors of cognitive performance than medical factors (including HIV-disease factors). Current quantitative criteria used in research to define cognitive impairment in PWH do not accurately reflect biological effects of HIV in the brain in this population. Together these findings suggest diagnosing cognitive impairment based purely on cognitive test scores may not accurately reflect HIV-related brain injury. Without a clinical history and the nuance of clinical judgment, diagnosis of cognitive impairment may be inaccurate.

A new approach to cognitive impairment in people living with HIV.

Sam Nightingale on behalf of the International HIV-Cognition Working Group.

Associate Professor of Neurology. Neuroscience Institute. University of Cape Town, South Africa.

Current approaches to classify cognitive impairment in people living with HIV (PLWH) may overestimate disease burden. The 2007 criteria for HIV-associated neurocognitive disorders (HAND), sometimes called the *Frascati criteria*, can falsely classify over 20% of cognitively normal individuals as impaired. Minimum criteria for HAND are met based on performance on cognitive tests alone, which may not be appropriate for populations with diverse educational and socioeconomic backgrounds. Imprecise phenotyping can limit mechanistic research, biomarker discovery and treatment trials. Importantly, overestimation of cognitive impairment risks creating fear among PLWH, and worsening stigma and discrimination towards them. In response we established an International HIV-Cognition Working Group which is globally representative and involves the community of PLWH. We reached consensus on six recommendations for a new approach. We propose the conceptual separation of HIV-associated brain injury (which can be active or the legacy of pre-treatment damage) from other causes of brain injury occurring in PLWH. We suggest moving away from a quantitative neuropsychological approach towards an emphasis on clinical context. Our recommendations are intended to better represent the changing profile of cognitive impairment in PLWH in diverse global settings and provide a clearer framework of classification for clinical management and research studies.

Research gaps in HIV and Non-Communicable Diseases (NCD) related to Vascular Cognitive Impairments and Dementias (VCID) in Eastern Europe and Central Asia

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People Living with HIV (PLWH) in Eastern Europe and Central Asia (EECA) have an increasing life expectancy accompanied by Noncommunicable Diseases (NCD), including VCID and Alzheimer's Disease (AD). Lacking in EECA is the research evidence base to define the magnitude of the HIV/NCD intersection, especially related to brain health. Among PLWH, VCID and ADRD may be associated with vascular risk factors, other infectious diseases (Hepatitis C virus, tuberculosis), and sociodemographic, mental health and lifestyle factors (e.g., injection drug use). Challenges in public health and medical education systems and organization of HIV care services in the EECA region include:

- Limited research capacity among health professionals, resulting from poor knowledge and skills in modern epidemiology and NeuroEpidemiology.

- Inadequate training programs in modern public health, epidemiology, and implementation science focusing on the intersection of communicable and NCD.

- Lack of career paths for public health and clinical researchers, including those interested in HIV-associated cognitive impairment and VCID research in PLWH.

- Limited health care research funding, in general, and weak support for HIV-associated NCDs and VCID.

- Vertical organization of HIV care services, with little or no integration with primary healthcare or chronic disease care services, resulting in low demand for research evidence to improve the quality of integrated care.

- Lack of vision, policies, and strategies for addressing the aforementioned issues and barriers.

International collaborative research and training programs (e.g., supported by NIH/Fogarty in the EECA region) offer good opportunities for addressing these issues and barriers, and creating a base for generating relevant research evidence on HIV-associated NCDs, VCID and AD.

Assessing health related quality of life in people living with HIB and cognitive impairment

Jaime Vera

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Quality of life (QoL) is recognized as an essential end point in the disease management of chronic conditions such as HIV, with calls to include good QoL as a ‘fourth 90’ in the 90-90-90 testing and treatment targets introduced by World Health Organization in 2016. Cognitive impairments impact a broad spectrum of experiences and are a common issue effecting people living with HIV (PLWH). This presentation aims to describe the factors driving QoL in those living with HIV and cognitive impairment, and the performance of existing patient reported outcome tools to assess QOL in PLWH in the post-cART era.

Acceptability and feasibility of routine screening for neurocognitive impairment in adults living with HIV

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Background: Neurocognitive impairment is prevalent in approximately 50% of people living with HIV, despite antiretroviral therapy being widely available globally. However, routine screening for neurocognitive impairment is not currently available in Zimbabwe. NeuroScreen, a tablet-based cognitive screener, was validated for use in Zimbabwe. It can be used to screen for people with cognitive impairment who should be referred for a full neuropsychological assessment.

Objective: To assess feasibility and acceptability of routine screening of neurocognitive impairment in adults living with HIV attending primary care clinics using NeuroScreen.

Methods: In-depth interviews were conducted with participants living with HIV and health professionals who administered NeuroScreen in the clinics. A technology use questionnaire was also administered to patients who had completed an assessment using NeuroScreen.

Results: 138 participants (female=97) completed the technology use questionnaire. 11 in-depth interviews were conducted with 4 health professionals before NeuroScreen administration, 3 health professionals after NeuroScreen administration and with 4 participants after they had completed an assessment using NeuroScreen. Four subthemes emerged which were: i) Screening informs clinical care: baseline data can be collected and monitoring of patients can be done; ii) Screening strategy: the success of routine screening will need a robust good strategy that would work well in primary care; 3) Versatile functions of NeuroScreen: in addition to being a cognitive screener it is also perceived as a cognitive training intervention; and 4) Empathy and understanding are crucial: participants preferred the person in charge of routine screening to also be living with HIV.

Conclusion: Participants reported NeuroScreen to be easy to use and are willing to have NeuroScreen incorporated in their routine clinic visits. Through routine screening, clinical care could be improved, and cognitive training interventions can be developed.

Delays and underdiagnoses of dementia in the LMICs: An Indian perspective

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Two thirds of people with dementia live in low and middle income countries (LMICs)but only about 10% of these persons are estimated to receive a dementia diagnosis. Reasons are multiple and complex. Early diagnosis is essential for initiating treatment, referral for care services, and planning for the future. There is a paucity of data on the pathways to dementia diagnosis in LMICs. We present our data on patients with dementia from a specialist memory clinic in Bangalore, India. The median time to diagnosis was 24 (range 3 to 180) months. 43% of the patients were diagnosed 24 months after symptom onset. Patients with young onset dementia, Alzheimer's disease, and Frontotemporal dementia were diagnosed significantly later as compared to those with vascular dementia and dementia with Lewy bodies. Education and gender did not have an effect on the time to diagnosis.

Both delay and lack of communication about the diagnosis of dementia appear to be important issues that need to be addressed to improve the early detection of dementia in India. Training of health providers appears an essential component in improving the early diagnosis of dementia. Findings from our study will be compared to literature from other LMICs and a comprehensive framework to improve early diagnosis of dementia in LMICs will be discussed.

Cross-cultural adaptation of AD-8 into Amharic for operationalizing the detection of cognitive impairment in a primary care setting of Ethiopia

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Background: This study aims to cross culturally adapt AD8 using the WHO translation and adaptation process guidelines in preparation for the development of a mobile health based dementia screening app at the primary care center of Ethiopia.
Method: The panel discussed forward and backward translated AD8 instrument items alongside with the original English version of AD8 and Lawshe's $CVR_{critical}$ value to adapt them to the interim final and the reconciled Amharic versions of AD8 respectively. The reconciled Amharic version was pilot tested, a cognitive interview was conducted, and the results were analyzed and a summary report was generated to adapt it to the final Amharic version of AD8.
Result: The Lawshe's CVR value was less than the expected $CVR_{critical}$ value (0.75) for all of the forward translated items of AD8 except for the 'Question items # 3 &7'. The panel substituted words and/or phrases in the title, instructions and 'Question items # 1 & 6'; and added 'Radio' to the Question item # 4. The Lawshe's CVR value (1.0) was greater than the expected $CVR_{critical}$ value (0.75) for all of the backward translated instrument items of AD8. The internal reliability of the reconciled Amharic version of AD8 was very good with a Cronbach's alpha value of 0.875. Cognitive interview study participants verbalized lived experiences to reason and explain the way the reconciled Amharic version of AD8 question items was understood. The reconciled Amharic version was adapted without any modification as the final Amharic version of AD8.
Conclusion: The Amharic version of AD8 demonstrated a very good internal reliability with strong item correlation. The Amharic version of AD8 fulfills the perquisite for the development of mobile health based AD8 dementia screening at primary care settings of Ethiopia and aligns with the WHO task-shifting strategy of dementia screening.

Suitability of Neuropsychological Tests for the Assessment of Dementia in Africa: A Systematic Review

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Background: Neuropsychological assessment is an important step in detecting, diagnosing, and following-up the evolution of a dementia syndrome. It should be based on valid, reliable, standardized, and culturally suitable tests. However, the majority of the available tests were developed in western countries, and little is known about how these tests were translated and adapted in Africa in concordance with the international guidelines of psychological measurement.

Objectives: The aim of this review is to inspect closely the available neuropsychological tests used in Africa during the last three decades, examine their psychometric qualities, and analyze their cultural appropriateness to the local populations.

Method: We performed a systematic review on published articles dealing with the neuropsychological assessment of dementia in the 54 African countries during the latest 30 years on main scientific search databases (Web of Science, Academic Search Ultimate (Ebsco), ScienceDirect, Scopus, PubMed, APA PsycArticles, Embase, Cochran). The search keywords were: dement* and (neuropsych* or *cognit*) and (assessment or evaluation or test*) and country, without restrictions about the language of publication. Our approach is fourfold: i) papers' extraction, ii) tests identification, iii) concordance analysis, and iv) appropriateness evaluation.

Results: We identified a list of different tests used in each country and estimated the level of their concordance with the international guidelines of psychological measurement regarding the translation and adaptation procedures as well as the type of validity, reliability, and the availability of local standardized data. More than the two-thirds of the identified tests did not respect the international guidelines of psychological measurement in developing, translating and adapting neuropsychological tests for the screening and assessment of dementia in Africa.

Conclusions: We focused on the importance to fix measurement’s issues in the neuropsychological assessment of dementia in Africa. A suggested list of recommendations was provided to improve it especially that Africa is the second most populous continent after Asia and its elderly population is showing the most rapid increase in the world.

Keywords: neurocognitive disorders, Africa, neuropsychological assessment, standardization, validity, reliability, cultural adaptation

DEVELOPMENT OF THE BRAZILIAN MINI-ADDENBROOKE'S COGNITIVE EXAMINATION (MINI-ACE BR)

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Background: Age is the most important risk factor for development of dementia and the recommendation is that the elderly be cognitively tested in order to detect impairment in the initial phase for adequate treatment. The demand for the care of these elderly people is great, drawing attention to the need for rapid tests, with good accuracy and simple application to identify cognitive impairment.
Objective: To develop the M-ACE Brazilian version using data from ACE-R deriving sub-items that could better predict the diagnosis of cognitive impairment.
Method: The M-ACE BR was developed using Mokken scaling analysis in 352 participants (cognitively normal = 232, cognitive impairment no dementia (CIND) = 82 and dementia = 38) and validated in an independent sample of 117 participants (cognitively normal = 25, CIND = 88 and dementia = 4).
Result: The M-ACE BR has nine items (spatial orientation, anterograde memory, retrograde memory, delayed recall, recognition, verbal fluency letter "P", repetition of four words, naming 10 items and comprehension) with a maximum score of 51 points and average duration time of seven minutes. The cutoff score ≤43/51 for CCSD had a sensitivity of 59.09% and a specificity of 80%. For a screening test in which sensitivity is prioritized for further investigation, we suggest using a cutoff of ≤47 (sensitivity 85.23% and specificity 24%), maintaining a good positive predictive value (79.8%).
Conclusion: The M-ACE BR is a brief and adequate instrument for detecting cognitive impairment in elderly Brazilians.

Validation of a cognitive assessment battery in the Botswana population

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Introduction
The world's population is rapidly aging and the number of older adults in lower- and middle-income countries is expected to exponentially increase in the next decades, which will cause a drastic rise in the prevalence and incidence of age-related diseases such as neurocognitive disorders. It is however estimated that 75% of people with dementia are not diagnosed globally, with the rate believed to rise as high as 90% in resource limited settings. This is partly due to a lack of appropriate assessment instruments and local expertise. Here, we present a protocol to culturally adapt and validate the tablet-based Brain Health Assessment (BHA), the National Alzheimer's Coordinating Centre's Unified Data Set (UDS-III), the Botswana Auditory Verbal Learning Task (BAVLT), and the Pfeffer Functional Activities Questionnaire (PFAQ).

Methods and analysis
This study will be conducted in Botswana, a resource limited setting with limited neurocognitive assessment tools and expertise. We have culturally adapted the tools and aim to validate them by administering the adapted battery to 200 patients with neurocognitive disorders and 200 neurologically healthy controls. Participants will be recruited from rural and urban areas of the country. A series of analyses will be conducted to determine how sensitive and specific the summary scores are to distinguish the groups.

Ethics and dissemination
This project received ethical approval from Health Research and Development Division of the Botswana Ministry of Health and Wellness and University Institutional Review Boards. The study will be the first to culturally adapt, translate, and validate tablet- and paper-based cognitive and functional assessments in Botswana, and to educate physicians and psychologists to administer and interpret the tests. Neurological and neuropsychological care is highly underserved in this setting. If successful, the proposed tools will provide practical screening and streamlined, comprehensive assessments that could be implemented. Thus, this project has high potential to improve clinical care and management of individuals with neurocognitive disorders in Botswana.

How we should work to join forces in an attempt to promote the scientific research in LMIC: experience from Latin America.

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Latin America (LA) is comprised by LMICs, and a population with ethnic, cultural and economic diversity and disparity. From the linguistic point of view, Spanish language is predominant, followed by Portuguese in Brazil. Even within the different Spanish-speaking countries, the language has evolved differently and for cognitive assessment or intervention, we need local adaptations and standards. A key objective for the coming years is to develop a common database that will enable the development and access to information that can be shared in different LA countries. Based on the experience of our group at Fleni, the collaborations between HIC began in 2011 with ADNI (Alzheimer Neuroimaging Initiative), followed by DIAN in 2014 (Dominantly Inherited Initiative) and finally in 2022 the LEADS (Longitudinal Early Onset Alzheimer Disease Study). They have allowed us to adapt and standardize the cognitive and behavioral instruments for screening and diagnosis, neuroimaging and the different biomarkers (CSF and brain PET scan). These associations have motivated us to achieve a high standard of research that has been put into practice in clinical care. However, an even more interesting experience is the work we have been carrying out in the last two years the LatAM FINGER. A collaborative project among 12 Latin American countries based on the FINGER project. This project allows not only an adaptation and harmonization of assessment instrument and multimodal intervention for each country, but also the development of a common LA database. The international collaboration between H and LMIC clearly allows the scientific development of the latter and the collaboration and common database between the LMIC encourages us to address the problems of diversity and disparity in a concrete way and not only with rhetorical discourses.

Cross cultural lessons learned

Mary Sano

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Neuro-BioBank Sri Lanka creating opportunities: cognitive, molecular biomarker discovery and natural product therapeutics

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Corresponding author received donation of equipments through IBRO, from NINDS, NIH, resulted in setting up;

1. One of the largest and most comprehensive scientifically investigated neuro-biobanks in South Asia, incorporates seventy-six human aging autopsy brains and DNA/serum Repository of 2700 neurological disease patients; stroke, neurodegenerative, neuromuscular, rare disease, and 500 controls.

2. Brain Bank; 50/76 elderly Sri Lankan brains compared with 42 elderly Indian brains, largest comparison of ageing neuropathologies in South Asia; revealed significantly high levels of neuropathological changes toward Alzheimer's Disease (AD) and Parkinsonism in the elderly Sri Lankans, demonstrated potential vascular genetic risk factors and coexisting cerebral small vessel pathologies; CAA and white matter hyperintensities in the pathogenesis of sporadic AD.

3. Nationwide free-of-charge molecular diagnostic service, funded by grants of corresponding author, with inadequate State support; Rare disease patients (n=623), of which 343/623 (55%) were positive by basic molecular diagnostics; Myopathy 153/236, Spinal Muscular Atrophy 22/66, Spinocerebellar Ataxia (SCA1-3): 123/234, Huntington’s Disease 45/87, 203/343 patients amenable to gene therapy. Unique biospecimens identified: three villages with high prevalence of SCA1 (with common ancestry), identical twins with DMD- 7th report worldwide, LGMD2A family with three generations consanguinity, and CADASIL young onset familial stroke and dementia.

4. OMICS studies identifying serum biomarkers: a) cognitive and fluid biomarkers point to astrocyte-centric model for DMD and AD, b) Cognitive impairment and protein levels of SCA subtype 1-3 have been identified.

5. Neuroprotective role of natural products was demonstrated using autopsy brain, genetic, and metabolomics studies.

6. Human resource development through Double Doctorates between Sri Lanka and Maastricht University, Netherlands.

Conclusion: Establishing cost effective neuro-biobanks are feasible in developing countries with low resources and limited state funding with dedicated PG students (co-authors 1,2,3). Sri Lanka Neuro-BioBank: A wealth creation and for translational collaborative research, a model for resource limited settings.

Biomarkers and Biobanking

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The Biobank of Aging Studies located at the University of Sao Paulo (BAS-USP), Brazil, was established in 2003 to investigate the neurobiological basis of age-related brain disorders in the admixed population (60% Caucasian, 30% African, with minor contributions from Asian and Native Brazilian ancestries) from Brazil. Since then, the BAS-USP has received more than 5000 brain donations. The BAS_USP differs from other brain banks because most age-related clinical-pathological cohorts are highly enriched for individuals of Northern European descent. This talk will discuss the most salient differences regarding prevalence, risk factors, and clinical outcomes of age-related brain pathologies in this population compared to those seen in Caucasians of Northern European descent and their implications for biomarker discovery and interpretation. This will include recent findings showing a) a dose-dependent relationship between an increased proportion of African ancestry and decreased burden of neuritic plaques, b) an attenuation of ApoE E4 risk to dementia and Alzheimer's disease neuropathological changes associated with local African ancestry on the Apoe locus. As one of the only existing brain banks collections with a diverse population mix, results based on BAS-USP collection have been showing the importance of investing in clinicopathological studies outside high-income countries since risk factors, clinical manifestation, and even neuropathological features of age-related brain diseases vary according to genetic and environmental particularities of each geographical location.

Deep phenotypic characterization of familial Alzheimer's disease PSEN1 E280A brains

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In the last 20 years we have collected around 130 donated brains from carriers of the PSEN1 E280A mutation in the Antioquia region in Colombia. During this time, we have studied some cases finding differences and similarities with sporadic Alzheimer's brains. However, the most striking finding has been the wide heterogeneity in the clinical presentation of the disease and pathology in these individuals that not only share a single common PSEN1 mutation but also belong to the same family, reside in the same are and share diet and customs. We are now using high throughput analysis techniques such as AI assisted quantitative digital neuropathology and single nuclei RNA sequencing in order to identify clinicopathological subgroups among these cases. So far we have identified a clear correlation between the localization and severity of Tau pathology and disease onset. We expect that by using more precise analytical tools, other associations will become evident and will assist us in a better understanding of pathophysiological mechanisms of disease in familial AD, and eventually in the more common sporadic variant of the disease.

Automated MRI-based analysis of medial temporal lobe volume is a key biomarker at early stage of Alzheimer's disease

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Background: Alzheimer's disease (AD) patients with a moderate to advanced level of disease severity can be distinguished from healthy elderly controls using volumetric measurements of medial temporal lobe (MTL) structures obtained using magnetic resonance imaging (MRI). Our aim was first to determine the ability of AI to distinguish between normal controls, MCI and AD subjects; and between subgroups of subjects diagnosed as MCI at baseline and to assess its ability to track change in the temporal lobes in controls, MCI and AD subjects
Method: Our study included high -resolution T1-weighted MRI scans of 90 subjects (30 NCs, 223 MCI and 261 AD patients) that were obtained from the ADNI (www.loni.ucla.edu/ADNI). Automated analysis is conducted on commercially available “uAI Brain” (United Imaging Healthcare, Shanghai, China) CE marked software. A cutoff score was measured in cm^3 (volume, ml). "MedCalc" statistical software was used for comparison of ROC curves.
Result: A cutoff score of 3.63 for hippocamp provided optimal discrimination between the AD and control group with high sensitivity (0.90) and specificity (0.92), (AUC=0,95), while a cutoff score of 1.68 for parahippocampal showed sensitivity (0.90) and specificity (0.92), (AUC=76). A cutoff scores for amygdala and entorhinal cortex was 1.55 with sensitivity (0.82) and specificity (0.92), (AUC=94) and 1.65 with sensitivity (0.74) and specificity (0.89), (AUC=85) respectively. A cutoff score for fusifom gyrus was 8.35 with sensitivity (0.64) and specificity (0.95), (AUC=86).
Conclusion: Our study confirmed, in terms of ease of interpretation, AI based representations of the medial temporal lobe atrophy are the best option. Future research should concentrate on multi-modal DL approaches because AD is a multifactorial and heterogeneous disease.

Blood Biomarkers: Democratizing Neurodegenerative Disease Diagnostics

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Alzheimer's disease (AD) is a progressive neurodegenerative disease, and the single commonest cause of dementia. Many other diseases can, however, cause dementia and differential diagnosis can be challenging especially in early disease stages. For most neurodegenerative dementias, accumulation of brain pathologies starts many years before clinical onset; the ability to detect these pathologies paves the way for targeted disease-modifying prevention trials. AD is associated with amyloid β and tau pathologies which can be quantified using cerebrospinal fluid and imaging biomarkers and, more recently, using highly sensitive blood tests. While for the most part specific biomarkers of non-AD neurodegenerative dementias are lacking, non-specific biomarkers of neurodegeneration are available. This talk summarizes recent advances in the neurodegenerative dementia blood biomarker research, and discusses the next steps required for clinical implementation and research in a global perspective.

Racial disparities in dementia biomarkers' research focussing on differences between Black African and Caucasians

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Biomarker research for Alzheimer's disease (AD) and other dementias has expanded exponentially in recent years. However, current insights into the utility of these biomarkers have been developed almost exclusively from studies in Caucasians.
The epidemiology, clinical features, and genetics of AD and other dementias has been found to show much heterogeneity between individuals from different ethnic and racial backgrounds.
Exploring and understanding ethnic and racial variation of the latest biomarker research findings in patients from under-represented populations will lead to improved diagnosis and management.
The focus of this presentation is upon the differences in dementia fluid biomarkers in African American and Black Africans and Caucasians and an exploration of strategies and tools aimed at eliminating current disparities and inequalities.

ADRD in a Ugandan context

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Alzheimer's Disease and Related Dementias (ADRD) are a major public health concern. Currently, over 55 million people have dementia, with more than 60% living in low- and middle-income countries (WHO 2022). In Uganda, the burden of ADRD is estimated between 5.5% and 20% of the total population 60 years and older. Despite this high prevalence of ADRDs, Ugandans living with ADRDs have limited access to clinical care facilities and psychosocial interventions.

Although the National Health Policy of Uganda states that access to mental health care is a priority, ADRD-specific care and management policies are still lacking. Clinicians in healthcare are often not equipped with skills, knowledge and interventions on how to best detect and manage people with ADRDs. More development of best practice research, policy, and care is much need in the country. Best practices include: screening, diagnosing and assessing the behavioural and social presentations of ADRD like health behaviours (sleep, exercise, diet); cognitive training and engagement; meditation approaches; social engagement; and pharmacological treatments. A comprehensive approach uniting all practices is essential in the design and implementation of policies.

There is a deeper and growing need for collaborative effort to broaden the scholarly and clinical scope of ADRD in Uganda in order to increase awareness and inform regional policies.

OVERVIEW, POLICY, CARE AND FUTURE DIRECTIVES OF SOUTH AFRICAN DEMENTIA PATIENTS

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South Africa has a population of 60 million of whom some 10% (6 000 000) are 60 years and older; giving rise to an estimated 600 000 elderly with dementia.

Covid-19 (including excess mortality) took 300 000 lives, many of them elderly.

To meet the needs of the elderly, we have one dedicated psychogeriatric unit at Stikland Hospital, Cape Town, University of Stellenbosch, comprising 90 beds. Additionally, there are various dedicated wards, usually attached to a university or state hospital, throughout the country. Furthermore, several NGOs and PBOs (public benefit organisations) assist.

Guiding the management of the elderly, is the Older Person's Act (Act 13 of 2006). This intends to deal effectively with the plight of older persons by establishing a framework aimed at their empowerment and protection and the promotion and maintenance of their status, rights, well-being, safety and security.

Regarding the financial and legal aspects of patients with dementia, we have recourse to administration and curatorship, but not enduring power of attorney.

There have been, thus far, dedicated but unsuccessful efforts by the Alzheimer's Association and Dementia South Africa to have cognitive enhancers listed as PMB (prescribed minimum benefit) by our medical insurance companies.

Shortly State Health will be allowing name-patient-based buyout of cognitive enhancers on motivation by geriatric psychiatrists at tertiary hospitals. (South Africa hopes to have its sixth geriatric psychiatrist next year).

Starting with subjective cognitive decline (SCD), there is a drive to detect potential patients with dementia as early as possible and treat with cognitive enhancers to slow down disease progression. Assessment here relies in the main on non-psychometric parameters.

Critical reflection in practice: Generating Knowledge from the Interactions with Promotores for Engagement in Neurocognitive Disorders.

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Background: *Colonias* are underserved areas along the Texas-Mexico border, with high incidences of neurocognitive disorders, dementia, and Alzheimer's disease (AD). Our goal is to build capacity to reduce risk, facilitate treatment for affected individuals, and provide caregiver support. Our aim was to construct an approach that was reflective and would reveal the rich and diverse ways in which people make meaning of their experiences and interactions with scientists, faculty, staff and students.
Method: We examined our work with local community health workers. (CHWs), *promotores* in Spanish, to establish contact with, engage, mobilize, and educate the Hispanic communities of the Lower Rio Grande Valley (LRGV). Qualitative research methods were the principal way to approach this aim, including critical reflection.
Result: We now have 347 certified *promotores* in LRGV: 174 in Cameron County, 169 in Hidalgo County, 3 in Starr County, and 1 in Willacy County. Most of the *promotores* in LRGV are female, Spanish-speakers (98%) although half of them are also fluent in English and more than half of the *promotores* have five years or more as a state-certified CHW. Assumptions about knowledge, power and reflexivity surfaced in the interactions with members of the academic world interacting with *Colonia*'s residents.
Conclusion: Aspects of critical reflection, including deconstructing assumptions about knowledge, power and reflexivity, are useful to guide actions that facilitate capacity building in the *Colonias*, as well as action research methodology. The LRGV population's characteristics make early detection of AD and dementia and support for patients and caregivers' high priorities and clearly understanding the role of *promotores* as mediators is important.

Keywords: Colonias, Promotoras, Dementia.

Integrating a community-level dementia screening programme in Kenya

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Background: Primary health care providers face the challenge of making timely dementia diagnosis due to limited time available to interact with patients resulting in stigma, neglect and abuse. With training, providers can collaborate with Community Health Workers (CHWs) to improve dementia detection and articulate the needs of communities whilst mobilizing resources that are salient in decision-making and service delivery processes. In this study, we outline the process that led to initial steps of integrating a community-level dementia screening programme in Kenya.
Method: As part of the Strengthening Responses to Dementia in Developing Countries (STRiDE) project, ten CHWs were trained to deliver a dementia awareness and anti-stigma intervention to 59 members of the general public in Makueni County, through four bi-weekly psycho-education sessions. This led to increased number of people turning up for dementia screening at the County referral hospital. However, due to lack of knowledge and busy waiting lines at the hospital, discussions on how to integrate dementia screening within the referral hospital began.
Result: Findings from the STRiDE project formed the basis for integrating a community-level dementia screening programme in Makueni County Referral Hospital in Kenya, a program that will result in community screening for dementia, targeting 2,400 older adults aged 60 and above. Those who screen positive will be referred for further care at the hospital. Through the anti-stigma intervention training, CHWs received knowledge on the importance of receiving a diagnosis and the proposed project will provide CHWs the tools to facilitate this.
Conclusion: Public awareness and stigma reduction through training CHWs can be a precursor to initiating dementia screening for older people in primary healthcare settings. The integration process also requires using task-sharing approaches in order to promote timely detection and improve care coordination at all levels of care.

Policy Relevant Experiences from Jamaica

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This presentation will focus on challenges and opportunities for policy building using Jamaica as a case study for the broader non-Latin Caribbean. The presentation will share about relevant experiences from the Strengthening Responses to Dementia (STRiDE) initiative and the Davos Alzheimer's Collaborative (DAC) Healthcare Systems Preparedness Flagship Project on timely detection of Alzheimer's Disease. From the STRiDE initiative key lessons include the need for dementia in all policies and the challenges of a lack of education and awareness and high levels of stigma about dementia among policy-makers. From the DAC initiative key lessons include the major barrier of a lack of sign-posting and unclear care pathway and enormous costs that confront most persons needing to get investigations done relevant to detection. It will highlight needed multisectoral and public-private partnerships and collaborations. It will outline challenges and areas for additional focus. Key lessons across both initiatives include the need to appreciate that policy development and changes are not overnight initiatives and require substantive relationship building over time and win-win low-hanging fruit in the shorter term. Further, they require the implementation of cross-functional leadership and team work.

Quality Standards on Human Rights for Services in Dementia Care

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People with dementia can experience violations of fundamental human rights and impeded access to healthcare. This work builds on the World Health Organization's good practice guidance on community mental health services by investigating the range of dementia services around the world and national/international clinical guidelines, and the views of experts regarding the use of the United Nations Convention on the Rights of People with Disabilities (CRPD) principles as quality standards for human rights-based care. Two scoping reviews of database and grey literature resources summarised the range of services, and clinical guidelines using content analysis. A single-round Delphi e-consultation with dementia experts was designed to evaluate each CRPD principle and collect feedback on their views about the applicability of the CRD principles.

Services in 31 countries were clustered in 7 categories: Supports and Services for families, Community centres, Community health and social outreach support, Crisis Services, Community health services, Networks of Services, Palliative/End-of-Life Care Services, and Supported living. National and international guidelines for quality practice were summarised for each service type. The CRPD principles were highly endorsed as quality standards, however as expected, given dominant practices in the field, several experts challenged the applicability of CRPD principles in relation to information disclosure, capacity assessment, stakeholders' involvement in decision making, respecting needs and preferences, holistic approaches in care practice, and protection of human rights against abuse, neglect and discrimination. These findings provide an overview of different services and clinical recommendations for dementia care, and lay the foundation for an international evaluation framework of quality practice. Future work will develop a concordant, human-rights based scheme for the evaluation of dementia services and use this to establish good practice guidance for dementia care using examples from across the globe.

ADDITIONAL PLATFORM PRESENTATIONS

Alzheimer Center in a Low- or Middle-Income Country

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Alzheimer’s disease (AD) and related dementias represent a major health problem throughout the world and especially in Low- or Middle-Income Countries. The prevalence of major neurocognitive disorders (MNCD) in Tunisia was estimated in 2014 around 4.6 % in the population aged 65 and over and the prevalence of AD of around 3.2%. The Alzheimer’s disease center (ADC) of Razi Hospital in Tunisia, opened in 2010, was the first structure in Tunisia, Arab world and Africa dedicated to the management of MNCD including early diagnosis, day care unit and research. In the first year, the number of new MNCD cases at the ACD was 345/year and reached 638/year in 2018. In 2020, among the 5764 patients followed for cognitive disorders, 4410 had MNCD with 1087 patients having early onset dementia (24.6%). Sex ratio was 0.87, mean age at first consultation was 73.9 years and mean age of onset 71.5 years. The first tunisian study on familial AD, conducted in the ADC, included 429 patients. An autosomal dominant transmission was found in 16.7%, an autosomal recessive (AR) transmission in 10.0% and a genetically complex heredity in 73.3% of cases. The genetic study did not find any pathogenic mutations in the *APP*, *PSEN1* and *PSEN2* genes, generally involved in autosomal dominant AD. Regarding AR AD, no relevant gene have been discovered yet. Finally, among the several susceptibility genes described in AD, the *ApoE*ε4 allele has also been identified as a risk factor for AD in Tunisia. In a cohort of 540 AD patients, the *ApoE*ε4 carriers represented 50.07% of cases and the homozygous *APOE* ε4/ε4 8.53% of cases. The *TREM2* gene, sequenced in 172 AD and 58 control subjects, did not show an association with AD. Future studies are needed to identify genetic risk factors specific to the Tunisian population.

IBRO 1. Experimental Studies: Genetically modified mice for research on human diseases: A triumph for Biotechnology or a work in progress?

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Genetically modified mice are engineered as models for human diseases. These mouse models include inbred strains, mutants, gene knockouts, gene knockins, and 'humanized' mice. Each mouse model is engineered to mimic a specific disease based on a theory of the genetic basis of that disease. For example, to test the amyloid theory of Alzheimer's disease, mice with amyloid precursor protein genes are engineered, and to test the tau theory, mice with tau genes are engineered. This paper discusses the importance of mouse models in basic research, drug discovery, and translational research, and examines the question of how to define the "best" mouse model of a disease. The critiques of animal models and the caveats in translating the results from animal models to the treatment of human disease are discussed. Since many diseases are heritable, multigenic, age-related and experience-dependent, resulting from multiple gene-gene and gene-environment interactions, it will be essential to develop mouse models that reflect these genetic, epigenetic and environmental factors from a developmental perspective. Such models would provide further insight into disease emergence, progression and the ability to model two-hit and multi-hit theories of disease. The summary examines the biotechnology for creating genetically modified mice which reflect these factors and how they might be used to discover new treatments for complex human diseases such as cancers, neurodevelopmental and neurodegenerative diseases.

Reference: Brown RE. 2022. Genetically modified mice for research on human diseases: A triumph for Biotechnology or a work in progress? The *EurobioTech Journa*l, 6(2): 61-88.

IBRO 2: Revising the synaptic theory of neurological disorders for the 21st Century

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In 1949, Donald O. Hebb developed his neuropsychological postulate, which involved three neural processes: synaptic modifications (i.e., the Hebb Synapse), the cell assembly, and the phase sequence. The Hebb synapse describes how activity at pre- and post-synaptic neurons modulates the strength of a synapse (and synaptic networks). The discovery of long-term potentiation and long-term depression provided evidence for the physiology of the Hebb synapse and synaptopathies have been found to underlie many neurological disorders. However, new findings suggest that the concept of the Hebb synapse needs revision. We propose a 'hepta-partite' model of the synapse to account for the role of astrocytes, oligodendrocytes, microglia, the extracellular matrix (ECM), and the neurovascular unit (NVU) in the regulation of synaptogenesis and modulation of synaptic activity/plasticity. Based on this new information, we revise Hebbian theories of synaptic plasticity, the cell assembly, and phase sequence underlying learning, memory and neurological disorders to reflect the current understanding of synaptic plasticity, while upholding the legacy of Donald Hebb.

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POSTER PRESENTATIONS

Poster abstracts

P-01 Changes in the gut microbiome composition may parallel Alzheimer's disease progression

Bernard Fongang

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Background: A bidirectional communication exists between the brain and the gut, in which the gut microbiota influences cognitive function and vice-versa. Gut dysbiosis has been linked to several diseases, including Alzheimer's disease and related dementias (ADRD). In animals, fecal microbiota transplantation reduces amyloid plaques in ADRD mouse models. In humans, patients with ADRD have decreased abundance of microbes with neuroprotective effects. A bidirectional communication exists between the brain and the gut, in which the gut microbiota influences cognitive function and vice-versa. Gut dysbiosis has been linked to several diseases, including Alzheimer's disease and related dementias (ADRD). In animals, fecal microbiota transplantation reduces amyloid plaques in ADRD mouse models. In humans, patients with ADRD have decreased abundance of microbes with neuroprotective effects.
Method: We have conducted a cross-sectional study to examine the connection between the gut microbiome, cognitive, and neuroimaging markers of ADRD in the Framingham Heart Study (FHS). Markers of ADRD included white matter hyperintensities (WMH), peak width of skeletonized mean diffusivity (PSMD), and executive function (EF), estimated as the difference between the trail-making tests B and A. Our study included 972 FHS participants with MRI scans, neurocognitive measures, and stool samples and quantified the gut microbiota composition using 16S rRNA sequencing. We used multivariable association and differential abundance analyses adjusting for age, sex, BMI, and education level to estimate the association between gut microbiota and WMH, PSMD, and EF measures.
Result: Our results suggest an increased abundance of *Pseudobutyrivibrio* and *Ruminococcus* genera were associated with lower WMH and PSMD (p-values < 0.001), as well as better executive function (p-values < 0.01). In addition, in both differential and multivariable analyses, we found that the gram-negative bacterium *Barnesiella intestinihominis* was strongly associated with markers indicating a higher ADRD risk. Finally, functional analyses using *PICRUSt* implicated various KEGG pathways, including microbial quorum sensing, AMP/GMP-activated protein kinase, phenylpyruvate, and β-hydroxybutyrate production previously associated with cognitive performance and dementia
Conclusion: Our study provides important insights into the association between the gut microbiome and ADRD markers in middle-aged individuals. It suggests that changes in the gut microbiome composition may parallel ADRD progression

P-02: Contributory factors for mild cognitive impairment and dementia in spinocerebellar ataxia

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Background: Spinocerebellar ataxia 2 (SCA2) is a rare neurogenetic movement disorder that presents with variable phenotypes. Cognitive impairment (SCA2-CI) is a major phenotype in SCA2. Reports of singular domain deficits and multidomain deficits akin to mild cognitive impairment (SCA2-MCI) and dementia (SCA2-D) have been described previously. However, the factors that contribute to the development of these cognitive states are not yet clear. In this study, we evaluated a cohort of 32 patients with SCA2-CI and classified them into SCA2-MCI and SCA2-D to study the clinical and genetic factors underlying SCA2-CI.
Method: The neurocognitive profile of 32 patients with SCA2-CI was evaluated using two neuropsychological tests with error-based scores per domain for learning and memory, complex attention, language and fluency, executive functions, and visuomotor constructive ability. Using normative data from age, gender, and education matched healthy population, the neuropsychological scores were classified as impaired or unimpaired. The consensus criteria for MCI and dementia in Parkinson's disease was used to classify SCA2-CI into SCA2-MCI and SCA2-D. The clinical and genetic variables such as age, age at onset of ataxia, trinucleotide repeat length, duration of disease, ataxia severity score, anxiety and depression scores, neuropsychiatric burden, and years of education were evaluated as predictors for cognitive states using binomial regression.
Result: The cohort consisted of 15 (46.8%) patients with SCA2-MCI and 17 (53.1%) patients with SCA2-D. There was no significant difference in the mean values of any clinical and genetic variables with the exception of years of education which was significantly lower in SCA2-D compared to SCA2-MCI (10.5 ± 2.6 vs 12.4 ± 2.7; p = 0.05). On binomial regression, the years of education (OR: 1.62, CI: 0.966 - 2.727, p= 0.05), ataxia severity score (OR: 0.841, CI: 0.728-0.972; p = 0.01), and neuropsychiatric burden (OR: 0.64, CI: 0.41 – 1.00, p = 0.05) were significant predictors for SCA2-MCI compared to SCA2-D, while controlling for other variables.
Conclusion: A lower ataxia severity score, lower neuropsychiatric burden, and higher years of education favoured SCA2-MCI over SCA2-D. The results imply the significance of cognitive reserve as a protective factor against dementia in SCA2.

P-03: ***Comparative Effect of Caloric and Non-Caloric Sweeteners on Neuroinflammatory Indices in Brain Cortex and Hippocampus of Scopolamine-Induced Rat Model of Amnesia***

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Background: Sweeteners remains a major component of human diet either healthy or under pathological state. Specifically, many commercial products such as carbonated drinks and other non-alcoholic beverages have varying amount of caloric or non-caloric sweeteners. Considering the pivotal role neuroinflammation plays in Alzheimer´s disease, we collected average data of quantities of two popular sweeteners in Nigeria- sucrose (caloric) and aspartame (non-caloric) in common carbonated drinks and other non-alcoholic beverages, and investigated their neuroinflammatory effects in scopolamine-induced amnesic rat model.
Method: Eighty-four Male Wistar rats were used in this study and divided into six groups; a control group, scopolamine (1 mg/kg; *i.p.*) treated group, scopolamine-treated groups plus sucrose (4 g/kg and 14 g/kg; *p.o.*) and scopolamine-treated groups plus aspartame (17 mg/kg and 67 mg/kg *p.o.*). Each treatment group received the samples once per day for 14 days while the control group was treated with normal saline only. However, scopolamine was administered on days 12-14. Thereafter, the rats were sacrificed and the brain tissue was excised, while the cortex and hippocampus were dissected out on ice. The tissues were homogenized and assayed for levels of as tumour necrosis factor-alpha (TNF-α).and activities of adenosine deaminase (ADA) and arginase, as well immunohistochemistry for glial fibrillary acidic protein (GFAP) and ionic calcium binding adaptor molecule 1 (IBA1).
Result: Results showed that scopolamine induced significant ($p<0.05$) impairments in the brain tissues by altering the enzyme activities, increasing TNF-α and glial reactivity. However, sucrose further increased ($p<0.05$) TNF-α levels and ADA activities, while both sweeteners further impaired ($p<0.05$) arginase activities. Nevertheless, no significant difference ($p>0.05$) compared to scopolamine treated group was observed for both GFAP and IBA1 reactivity.
Conclusion: These results suggest that both sweeteners at levels available in common commercial drinks in Nigeria could further elicit neuroinflammaotry effects under amnesic conditions and should be discouraged under this pathological condition.

P-04: ***Dietary Neuroprotection on the Degree of Proteinopathies in Sri Lankan Aging Autopsy Brains: A study protocol***

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Background: Neuroprotective role of natural products has been studied in vivo through established biobank: https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(20)30405-1/fulltext:Aging autopsy brains (n=76) and DNA Repository (Parkinson's disease-370, Duchenne Muscular Dystrophy-236, Spinal Muscular Atrophy-66, Huntington's Disease-87, Spinocerebellar Ataxia-234 controls-500). The proposed collaborative study between India, USA and Sri Lanka is a continuation of a double doctorate awarded to the largest and the most comprehensive study for ageing pathologies performed across culturally and genetically affiliated populations of two South Asian countries; India and Sri Lanka. We proved neuroprotective effects of Sri Lankan dietary natural products, life style factors and genes in aging autopsy brains (n=76 Sri Lanka, n=32, India) for early identification of risk factors and timely intervention. A phytochemical study on seven cinnamon species indigenous to Sri Lanka had diverse chemical compositions, antioxidant and anti-inflammatory properties. Ceylon Cinnamon demonstrated activation of p53 and pRB tumor suppressor activities in cancer cell specific manner. The aim of the current study is to investigate the effects of Sri Lankan natural products on healthy brain aging and degree of proteinopathies and genes that increase their risk.
Method: Reactive oxygen species, oxidative damage to proteins and DNA would be measured. Oxidative damage to DNA would be measured by GC-MS and validated by a conventional method. The relationship between oxidative stress and degree of neuropathology would be determined. The level of reduced GSH (rGSH) would be measured in brains with low levels of oxidative stress with mild to moderate degree of neuropathology using ^{1}H NMR-metabolomics. These results would be validated using a conventional method. If rGSH level is indirectly proportional to oxidative stress it could be said that Sri Lankan natural dietary products promote production of GSH in the brain. The effect of cinnamon in the diet could be observed through a negative correlation between the level of α-synuclein and level of DJ-1 in the brain tissue. Therefore, this study attempts to answer the question of whether Sri Lankan dietary natural products influence healthy brain aging and prevention of neurodegenerative disorders through the regulation of the level of glutathione (GSH) and upregulation in the expression of DJ-1 mainly through cinnamon.
Result: N/A
Conclusion: N/A

P-05: Mapping cortical lesions and communicative deficits in bilingual aphasia

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Background: A lack of basic knowledge about bilingual language organization prevents the adequate treatment of bilingual individuals following brain damage, leading to recovery rates that are well below those of their monolingual counterparts. The current project addresses this gap in our knowledge by testing healthy and aphasic bilingual individuals in behavioral and fMRI paradigms to identify the degree to which the cognitive and neural mechanisms that support bilingual language use are shared or distinct across languages and what factors will determine the extent of their damage after a lesion.
Method: This study combines the study of aphasic and healthy Spanish-English bilingual individuals in behavioral and fMRI tasks to create a symbiosis where theory and praxis mutually inform each other. Specifically, the project investigates the typology of deficits in post-stroke aphasic bilinguals at the lexical level (i.e., single-word level), and at the morphosyntactic level (i.e., how words are combined into meaningful phrasal/sentential structures) through the analysis of a spontaneous speech. Additionally, it targets the neural bases of these processes through a combination of voxel-based lesion-symptom mapping in post-stroke aphasic bilinguals and fMRI analysis of healthy bilingual individuals.
Result: Predictions: This experiment will render a typology of functional loss across lexical and morpho-syntactic levels, which will be used to evaluate whether language background factors such as Age of Acquisition and Language Proficiency can predict the typology of aphasia of a patient. Additionally, we will evaluate whether the linguistic features that are more susceptible to damage after a stroke could be those that are only existent in one of the two languages, (e.g., gender, case).
Conclusion: By combining the study of large speech corpus, targeted experimental paradigms, and neuroimaging, this project will render a comprehensive characterization of bilingual individuals' language organization across linguistic levels. This information will constitute the first step to subsequently develop theoretically informed language recovery strategies, and protocols tailored to the needs and characteristics of brain damaged bilingual individuals. This will lead to the development of targeted intervention approaches that will maximize language recovery in post- stroke aphasia in a demographic group that will be the majority of the US population by 2040.

P-06: ***Awareness creation on the molecular and cellular events common to Ageing and Neurodegenerative diseases such as Alzheimer's disease (AD) and the distinctions between both: Implications for AD Therapeutic Formulations Interventions***

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Background: Neurodegenerative diseases (NDs) specifically, Alzheimer's - (AD), Parkinson's- (PD), Huntington's- (HD) caused by neurotoxins-induced depletions of brain-localized neurotransmitters (acetylcholine, dopamine, and gamma amino butyric acid, GABA respectively) synthesized by specific neuronal-cells are characterized by: neuronal cells-deaths - progressively/irreversibly - after some points. Specific neuronal-cells secrete specific neurotransmitters. The AD, PD, HD symptoms manifest from these, above-listed, neurotransmitters' deficiencies. The seven-known molecular/cellular events of Ageing are common to NDs, yet clear-cut distinctions still exist between both processes. This presentation will create awareness of these events, their distinctions and implications for appropriate therapeutic formulations-combi for frank AD prevention management going forward.
Method: Through threaded literature-reviews and analyses of findings obtained.
Results: All cells-types in the human body are grouped into four broad tissue-types: epithelial, connective, muscle, and neuronal. Neuronal-tissue cells are specialized-cells bearing axonal protrusions are responsible for maintaining critical life-sustaining functions: general body homeostasis and that of the brain's locally-synthesized cholesterol. Neuronal-cells malfunction under multivariate impacts of specific neurotoxins (from the environment, and those generated from specific foods over-processed by dry-heat of >140-165 degrees centigrade: the so-called Millard's reaction products) causing their deaths by fibrotic-necrosis. Unlike normal cells deaths (apoptosis), neuronal-cells dying by necrosis fail to send chemical signals to resident immune-cells (microglia) of the brain, preventing their phagocytic response and causing dead-cells debris to accumulate. The seven molecular/cellular events common to Ageing and NDs are alterations in: proteostasis, epigenetics, metabolisms, stress-adaptation, inflammation-response, macromolecular damages, neuronal stem cells' abilities to regenerate new brain-neurones to replace dead ones. Wallerian-type degeneration of myelinated cholinergic-neurones axons (causing AD) represents an isolated/early event which precedes neuronal-cells deaths and earliest onset of AD before the irreversible-symptoms appear: marked by acute-elevation of plasma 24S-hydroxylcholesterol levels, which also marks acute-onset of brain-cholesterol dis-homeostasis. These have important-implications for targeted-therapy formulations for AD management.
Conclusion: 'AD is distinctively a ND that shares the seven common cellular/molecular events of Ageing' and; Conceptually: "Only efficacious therapeutic combinations can be suitable for AD-prevention management, a mono-therapy approach cannot control or reduce the multiple risks-factors associated with frank AD development."

P-07: ***SOCIAL NETWORKS FOR OLDER ADULTS WITH AND WITHOUT ALZHEIMER'S DISEASE IN CENTRAL UGANDA***

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Background: Small social networks have been associated with dementia in a number of studies. We aimed to compare social networks for older adults with and without Alzheimer's Dementia (AD) in central Uganda.
Method: This was a community cross-sectional study in Wakiso District, Uganda. We recruited older adults with AD and those without AD in a ratio of 1:2 respectively. Dementia was screened using the Mini Mental State Exam and AD diagnosed with the Diagnostic and Statistical Manual-5. Poor social support network was determined with the Lubben Social Network Scale (LSNS-R), cut off <24. We compared AD and non-AD groups and conducted bivariate and multivariable analysis with statistical significance set at $p<0.05$.
Results: There were 64 participants with AD and 144 participants without AD. The mean age was 78.8(9.8) in the AD and 72.8(8.2) in the non-AD group, $p<0.01$ with half >80 years in AD category 32(50.0%) versus a quarter 38(26.4%) in the non-AD category. The mean LSNS-R was lower in AD versus non-AD, 29(Sd 11) vs 33(Sd 12) $p=0.039$ respectively. Low social interaction was worse 25(39.1%) in AD compared to 40(27.8%) in non-AD but not statistically significant. Participants with AD were contacted less by their relatives before making decisions AD; AOR; 6.22, $p=0.049$.
Conclusion: There is poor social networks for individuals with AD in this community population, despite lack of statistical significance and less contact to them for decision making. Community activities for the elderly to reduce social isolation and supporting shared decision making for older adults AD and their caregivers are recommended.

P-08 :*Lifestyle and Sociodemographic Features impacts the cognitive performance of Peruvian Adults*

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Background: Cognitive impairment and dementia result from the interaction of modifiable and non-modifiable risk and protective factors. In low and middle-income countries, these risk factors such as the environment, educational attainment, and time devoted to cognitively stimulating activities, and physical activity could have a greater impact on cognition.
Objective: This study aimed to investigate the mediating role of lifestyle and sociodemographic characteristics in the years of education and cognitive performance in Peruvian adults.
Methods: This cross-sectional study included 1,478 subjects assessed by Addenbrooke's Cognitive Examination Revised (ACE-R). We use mediation models to assess the mediation role of parents' educational level, reading time, and physical activity time in the years of education and cognitive performance of Peruvian adults.
Results: Participants who reported having lived in an urban area during their childhood are estimated to have, on average, 2.085 years more formal education than those who lived in rural areas. In addition, 49% of cognitive performance scores are explained by the mediation effect of reading and physical activity time in the years of education. This implies that higher levels of education, mediated by reading time and physical activity time per week, are 1.596 units associated with higher scores on the Addenbrooke's Cognitive Examination Revised.
Conclusion: Even though non-modifiable factors (i.e., childhood residence area, parents' educational level) seem to affect older adults' cognition, their influence is mediated by other factors that are indeed modifiable (i.e., reading time, physical activity engagement). In this sense, lifestyle changes could help prevent or decrease the risk of cognitive impairment and reduce the disease's impact on vulnerable environments in Latin American and Caribbean countries. Further interventions may strongly recommend the inclusion of these modifiable factors to prevent cognitive deterioration and dementia.

P-09: ***Prevalence and Determinants of Dementia among the elderly in the Buea Health District: A Community-Based Study.***

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Background: Dementia is a neurological disorder characterized by a disturbance of multiple cognitive functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgment. It is one of the major causes of disability in elderly people and the second leading contributor to death from neurological diseases. Worldwide, it`s prevalence among 60+ years old varies from 5-7% and in developing countries, it varies from 1.8-21.1%. The main objective of our study was to determine the prevalence and determinants of dementia among the elderly population in the Buea Health District.
Method: A community-based cross-sectional analytical study was carried among elderly 60 and older in the Buea Health District from February to April 2022. Multistage cluster sampling was used to recruit participants. 402 participants were recruited and screened using the Community Screening Interview for Dementia. Dementia was diagnosed using the Diagnostic Statistical Manual of Mental Disorders fifth edition.
Result: 402 participants were recruited, 267(66.4%) were female. The prevalence of cognitive impairment and dementia were 28.3% and 7.0% respectively. Dementia was more common in women. Increasing age was associated with an increase in the prevalence of dementia. Elderlies with primary education (AOR: 0.390;95CI:0.171-0.893) and secondary education (AOR: 0.208;95CI:0.044-0.981) were less likely of having dementia compared to those who had never gone to school. Participants who had hearing difficulties (AOR: 4.062;95CI: 1.391-11.861) and those who did <1hour of physical activity per week (AOR: 9.687;95CI: 1.285-73.040) were more likely of having dementia than those who had no hearing difficulties and did >1hour of physical activity per week respectively.
Conclusion: The prevalence of dementia in the Buea Health district was 7.0%. Up to 28.3% of the studied population had cognitive impairment. Dementia was more common among females, and Increasing age, no or primary level of education, hearing difficulties and physical inactivity were associated with increased risk of having dementia

P-10: ***A COMPARATIVE REVIEW ON THE INFLUENCE OF URBAN DESIGN ON MENTAL HEALTH IN A DEVELOPED AND DEVELOPING NATION***

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Background: Mental health contributes to the success of a resilient and sustainable city, it is one of the leading causes of long-term disability and accounts for over 7.4% of the disease burden in the world today. Cities are associated with higher rates of mental health problems than rural areas. While mental health problems are found in almost every country, several reports suggest that treatment perception and availability vary in different regions, particularly between developed and developing countries. A developed country is said to have a high quality of life, advanced technology, etc. while a typical developing country is characterised by poor economy, etc. With a general perception that cities in richer countries are large because they build ‘’out’’ and build ‘’up’’, whereas cities in poorer countries have become as large somewhat due to overpopulation. Urbanisation and population growth in developing countries have caused problems in such cities, where the majority of the populace live in slums and squatter communities. Nevertheless, statistics have shown surprisingly that richer countries have higher rates of mental health issues compared to poorer nations.
Method: Two case studies in Lagos, Nigeria, and Lapua, Finland on Urban design and mental Health (both published in the Urban Design and Mental health journal), will be reviewed, and data analysed to distinguish the similarities and differences between both cities in the influence of urban design on mental health.
Result: Proposed result: This review aims to contrast the urban design scenario and its influence on mental health in a high-income country: Lapua, Finland, and that of an LMIC: Lagos, Nigeria. The review will highlight the differences in both countries and the lessons learned from the individual case studies, the level of prioritisation of mental health in urban design, weaknesses, and strengths of urban design to mental health, in both nations, etc.
Conclusion: At the first glance, cities of a developed country seem safer with a clean environment, but with further explorations, we may soon discover interesting points demanding us to reflect and amend the customary thinking. Ironically urban design in LMICs may offer useful lessons to urban design and mental health.

P-11: ***African Brain Health Interactive Dashboard: Improving access to epidemiological data on established and emerging dementia risk factors and determinants of brain health for countries in Africa***

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Background:
At a population level, some portion of dementia may be preventable by intervening at different times in the life course. Little is known about the burden and distribution of established and emerging dementia risk factors in countries in Africa. The lack of readily available information impedes research and policy efforts to design and implement contextually appropriate interventions to mitigate risk.
Method:
We use the World Health Organization's (WHO) framework for optimizing brain health across the life course to design and develop a public-facing, interactive African Brain Health dashboard to visualize available epidemiological data on dementia risk factors and determinants of brain health for each country. We mapped 12 established potentially modifiable risk factors for dementia identified by the 2020 Lancet Commission on Dementia onto the framework. Furthermore, we added emerging and regionally important potential risk factors (for example HIV and undernutrition.)
Result:
We have built a working prototype dashboard using Tableau which includes multiple, interactive components including choropleth maps of the continent for each brain health domain. Individual indicators can be filtered by country, percentage of population under 25 years, and World Bank income group. We will use this prototype to develop a production-ready dashboard, and we will showcase the utility of this resource using case studies comparing risk factors across countries, as well as an analysis of multiple risk factors for an individual country.
Conclusion:
Making available curated collated data that is easily visualized is critical to support research and policy development for brain health that is context-appropriate for low- and middle-income countries.

P-12: ***Poor sleep quality and frequent use of sleep drugs were associated with dementia: an ELSI-Brazil study***

Wyllians Borelli

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WITHDRAWN

P-13: ***Latin American strategy for dementia prevention through lifestyle modification. Colombian experience in a multicenter study with 12 Latin American countries.***

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Background: The research addressing dementia prevention trougth lifestyle modification is still scarce mostly in Latin America, where the modifiable risk factors are greater than in developed or high-income countries. To address this gap in the development of preventive strategies to reduce the risk of Alzheimer's disease, 12 Latin American countries have joined forces to develop a multicenter study named LatAm Fingers to evaluate the adherence and efficacy of a highly structured intervention to improve cardiometabolic, and brain health. In this poster we will present the experience of Colombia in all phases of the study, preliminary results in terms of adherence to the intervention in our country, as well as recommendations to develop this type of highly structured intervention in low- and middle-income countries.
Method: Intervention study to assess adherence and efficacy of a multimodal intervention to reduce the risk of dementia and improve brain health.
Result: After 6 months of starting the intervention in Colombia, an adherence to the intervention of more than 90% is recorded. 50% of the estimated sample has completed all the stages of the intervention and 100% of the flexible group has participated in the follow-up evaluation at six months. Preliminary baseline data suggest that the population included in Colombia has a high frequency of premorbid health conditions associated with joint pain, cardiometabolic disorders, and pre-diabetes. Screening data indicate a high presence of mental health disorders, diabetes, heart failure and COPD.
Conclusion: The collaboration of community leaders and the participation of local governments is key to the development of highly structured interventions that require a significant investment of resources. This collaboration also influences adherence to the intervention through the use of community resources. In our population there is a high frequency of adverse health conditions both mentally and physically, which can be explained by the history of social and economic deprivation suffered by the older adult population during the years of violence and stagnation of socioeconomic development. from the country. Engaging this population in initiatives such as LatAm Fingers contributes to social justice and likely to reduce dementia risk through control of modifiable dementia factors.

P-14: ***The interaction of Type 1 Interferon and STAT1 in HIV-associated neurocognitive disorder (HAND) and Alzheimer's Disease pathology***

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Background: Alzheimer's disease (AD) is an age-related neurocognitive disorder caused by the accumulation of amyloid beta in the brain. Additionally, it has been established that Human Immunodeficiency Virus (HIV-1) infection can accelerate the aging of people living with HIV-1 which can cause HIV-associated neurocognitive disorder (HAND) even in treated patients. Even though the clinical evidence indicated a potential link between HAND and AD, most of the molecular mechanisms that link HAND and AD are not well characterized. Therefore, this study will determine the gene expression of signal transducer and activator of transcription 1 (STAT1) and interferon induced protein with tetracopeptide (IFIT) in differentiated neuronal cells (SH-SY5Y) exposed to various concentrations of amyloid *beta* (Ab) and/or HIV-1 protein in *vitro* respectively. The study will provide IFITs and STAT1 as key regulators that coordinates the HAND and AD pathology in the brain.
Methods: The present study was an *in vitro* characterization of Ab and/or HIV-1 tat protein induced Type I interferon pathway in differentiated SH-SY5Y cells. Following the establishment of the *in vitro* model, the STAT1 and IFIT mRNA and proteins expression were characterized and compared with the control condition. The PCR, flow cytometry, and immunocytochemistry analyses have contributed to the characterization of the Type1 interferon pathways in AD pathology.
Results: STAT1 and IFITs were independently associated with higher deposition of Ab and HIV protein exposure respectively *in vitro* ($p < 0.0001$). The current study established that there was an up and downregulation of IFITs protein in SH-SY5Y cells exposed to HIV tat protein and Ab for 96 hours respectively, indicating the multiple interferon-stimulated genes whose transcription is activated through the JAK-STAT pathway.
Conclusions: STAT1 and IFITs proteins are significantly dysregulated in AD pathology. This observation is corroborating our previous study on both IFITs and ISG15 in postmortem brains of people with AD and HAND separately. Considering the importance of the JAK-STAT pathway in AD and HAND, this observation can provide a therapeutic target for future clinical practice for patients with AD and HAND.

P-15: ***Vascular Contributions to Cognitive Impairments and Dementias in People Living with HIV in the Country of Georgia.***

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Background: Limited knowledge exists about vascular contributions to cognitive impairments and dementia (VCID) among people living with HIV infection (PLWH) who are ≥40 years in the Eastern European and Central Asia (EECA) region including Georgia. In addition, these PLWH experience high rates of injection drug use and alcoholism. The intersection of VCID with the HIV care continuum addresses the surging 'HIV + noncommunicable disease (NCD)' care continuum, which has never been estimated in Georgia and the EECA. To mitigate adverse effects of VCID among PLWH, the prevalence of VCID and other aging-related risk factors must be estimated and characterized across the HIV care continuum.
Method: We obtained funding from the NIH Fogarty International Center to conduct a first-ever cross-sectional pilot study of VCID among 150 PLWH age ≥40 years in the country of Georgia in 2022-2023.
Result: We are implementing a pilot study to address VCID among PLWH ≥40 years old in Georgia. We are also training an Early Stage Investigator in VCID measures and brain health outcomes; and hands-on training in research project development, implementation and analysis. We will characterize sociodemographic and HIV (e.g., HIV viral load, CD4+ count) factors; and estimate the prevalence of VCID and brain health outcomes. VCID include obesity, hypertension, Type 2 diabetes, and hyperlipidemias; history of cardio- and peripheral vascular events; cigarette smoking; alcohol use; and substance abuse. Brain health outcomes include cognitive performance and impairment, severity and clinically-relevant depression and anxiety symptoms, and history of cerebrovascular disease and stroke. We will evaluate VCID risk and history with stratification by HIV severity (viral load and CD4+ count), HCV co-infection (yes/no), injection drug use (yes/no), 10-year age group, and sex and gender.

Conclusion: Data from this first-ever pilot study will advance the VCID field among PLWH in the EECA region.

P-16: ***The Test of Keur Madiabel is a valid and reliable tool to assess ADL for the screening of dementia***

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Background: Dementia is a public health priority. Unfortunately, they are underdiagnosed. While tools to assess the ADL are available worldwide for the screening of dementia, most of them are inadaptated to the African context. They are biased by the culture and values of the population This is the reason why we develop a tool to assess ADL to screen for dementia in Senegal: The Test of Keur Madiabel. The objective of this study was to validate its performance as a screening tool.
Method: The "Test of Keur Madiabel", developed by Pr Kamadore Touré is composed of questions related to the main activities of the elderly with a score varying from 0 to 6 points. It was applied to Senegalese elderly patients aged 55 years and plus utilizing the Health and Social Center of IPRES (Institution de Prévoyance Retraite du Sénégal), Dakar-Senegal for health care. Through an age-matched case-control study, 50 cases of cases of dementia and 61 healthy control were included in the study. The "Test of Keur Madiabel" was administered once. Criterion validity, construct validity and reliability of the tool were be assessed.
Result: The population had a mean age of 74 years (±5,4). They were mostly married (71.7%), literated (59.5%). Physical activities were more frequent among control (52.9% vs 867%). Cases had more past medical history compared to control for Familial history of memory problem (23.5% vs 1.7%, $p< 0.000$), stroke (37.3% vs 15%, $p < 0.007$). However, control presented more arthritis (5.9% vs 26.7%, $p<0.036$) and anaemia (11.7% vs 2%, $p<0.049$). The ‘Test of Keur Madiabel’ had a specifity of 100%, a sensitivity of 91.07%, a Positive Predictive Value of 100%, a Negative Predictive Value of 91.67%. The area under the ROC curve was 0,958 with a Kappa of 0.964. It was correlated with the Test of Senegal ($r=0.96$) and the Test of Fillenbaum ($r=1.0$). Correlations between items were all positive. The time duration for administration was 5 to 15 minutes.
Conclusion:
The ‘Test of Keur Madiabel’ is a valid and reliable tool to screen for dementia. It was easy to use in the Senegalese population.

P-17: ***Modulatory role of curcumin on cobalt-induced cognitive deficit, oxidative damage and astrocytosis: involvement of Nrf2 signaling.***

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Background: Chemical overexposure is a growing environmental risk factor for many medical issues. Cobalt toxicity from environmental, industrial, and exposure, has previously been linked to neurological impairment. Hence, the current study looked into the neuroprotective potential of curcumin, a natural polyphenol contained in the spice turmeric, against cobalt-induced neurotoxicity.
Method: Adult rats of weight 170-200g were randomly divided into six groups as follows: control, 40 mg/kg cobalt chloride ($CoCl_2$) only, 240 mg/kg curcumin only, 120 mg/kg or 240 mg/kg curcumin or 100 mg/kg Vitamin C co-administered with $CoCl_2$. The administration was via oral route daily for four weeks. After that, neurobehavioral tests were undertaken to evaluate short-term spatial memory. Biochemical investigation was performed to determine the hippocampal levels of status via measures of SOD, CAT, GST, and LPO). Furthermore, immunohistochemical assessment of the expression of GFAP and Nrf2 in the hippocampus was carried out.
Result: In the $CoCl_2$ group, the results showed altered behavioral responses, a decrease in antioxidant activities, increased expression of GFAP and the number of activated astrocytes, and decreased immunoexpression of Nrf2. These effects were mitigated in the Curcumin and Vitamin C treated groups.
Conclusion: These results collectively imply that curcumin enhances cognitive functions in rats exposed to cobalt possibly by modulating oxidative insults, astrocytosis, and Nrf2 expressions.

P-18: ***Screening for proteinopathic-related dementias in low-resource clinical contexts: A machine learning approach***

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Background: The prevalence of Alzheimer's disease (AD) and other subtypes of proteinopathic-related dementias (PRDs) are increasing at a rapid rate in low- or middle-income countries (LMICs). The wide-ranging social and economic consequences of PRDs means there is an urgent need for clinical services dedicated to their early and accurate detection. The aim of the present study was to use machine learning techniques to identify a minimum number of clinical variables (neuropsychological test data and vascular risk factor information) required for accurate classification of PRDs in an older adult sample from a LMIC population.
Method: The present study used data from a memory clinic sample of 253 South African older adults (130 PRDs,123 without PRDs). Information 20 clinical variables (neuropsychological test scores plus a vascular risk factor variable) were used as features for the analysis. We used C5.0 decision tree algorithms to identify the most important features for PRD diagnosis and derive a decision tree that could accurately diagnose these types of dementia.
Result: The C5.0 algorithm reduced the number of clinical variables for screening PRDs from 20 to 9 (RBANS Figure Recall, vascular risk factor (VRF), phonemic verbal fluency, RBANS List Recall, RBANS List Recognition, Digit Span Backward, CLOX1, CLOX2, and ∆CLOX2-1), and classified the validation sample with an accuracy exceeding chance performance. Accuracy, sensitivity, and specificity values were all greater than 70%. Performance on tests assessing memory and executive functioning were the features that predominantly distinguished the PRD and comparison groups from one another.
Conclusion: The derived decision tree is a suitable and easy-to-interpret approach for PRD screening in LMICs. Its utility as part of standard clinical practice has the potential to free up strained resources and to allow clinical expertise to be employed more selectively.

P-19: ***Developing a tablet-based cognitive tool for dementia assessment across cultures: A pilot study with healthy adults in the UK and India***

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Background: The global rise in dementia prevalence has made it increasingly crucial to develop assessment tools which are cross-culturally valid. Previous research has shown that the oddity judgment task, a visual discrimination task that involves selecting the odd-one-out from an array of images, is sensitive to differential patterns of medial temporal lobe (MTL) pathology seen in distinct forms of dementia (Lee et al., 2006). In the present study, we developed a tablet-based version of the Oddity task (as part of MiND – Memory in Neurological Disorders application) with stimuli that are designed to tap into the functions of distinct MTL networks and be culture-neutral. We tested MiND in a cross-cultural pilot study with healthy young and older adults to examine the effects of age on Oddity task performance i) across five stimulus categories, each targeting different brain networks implicated in dementia (Scene, Face, Object, Emotion, and size Control), and ii) across cultures.
Methods: Data collection was carried out in the UK with 141 participants (n = 72 young adults, M_{age} = 19.36 ± 1.21 years; and n = 69 older adults, M_{age} = 60.74 ± 6.22), and in India with 149 participants (n = 77 young adults, M_{age} = 21.34 ± 1.71; and n = 72 older adults, M_{age} = 55.57 ± 4.87). Participants completed a series of Oddity tasks on MiND, and a brief demographics and digital experience survey. A mixed-effects modelling approach was used to analyse the data.
Results: For both accuracy and reaction times, we found a significant main effect of stimulus category and an interaction between category and age across cultures. Young participants performed the task faster and more accurately than their older counterparts on all Oddity stimulus categories except for the size control task. The effects were maintained even after accounting for demographic and digital experience differences between age groups.
Conclusion: These results suggest that the Oddity task is sensitive to age-related cognitive impairments as early as midlife. Notably, these effects generalise between cultures, thereby demonstrating that perceptual discrimination tasks may be useful tools for detecting incipient cognitive impairment related to reduced MTL integrity in cross-cultural populations.

P-20: ***Prevalence and Patterns of Cognitive Impairments in a Sample of Older Adult Community Dwellers from Nigeria***

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Background: Prevalence and patterns of cognitive impairments were studied in older adult samples from Nigeria and contributions of demographic variables and modifiable risk factors.
Method: Five hundred participants (288 males; age: 60-85) were recruited. Five domains of cognition: attention/concentration, processing speed, memory, executive function and visual-spatial indexes were tested together with the Montreal Cognitive Assessment (MoCA).
Result: We showed using 1.5 SD (and Mean) that 13% (41.40%) of the participants were impaired on visual-spatial index; 6.8% (48.7%) on memory index; 5.2% on attention/concentration index (49.2%); 2.7% (56.50%) on executive function index and 34.80% (mean only) were impaired on processing speed index. Also 8% (37%) of the participants were impaired on MoCA. We further showed 49.7% had normal cognition, 34% had borderline cognition, 12.9% had MCI (2.72% with aMCI) and 3.4% had dementia. Our results showed significant differences of gender and education on: visual-spatial, processing speed and attention indexes as well as interaction effects. Education had effects on executive function and processing speed. Significant interactions of gender and education were found only on executive function index. No significant differences were seen of hypertensive and diabetic histories on processing speed and visual-spatial indexes. Equally no significant differences were seen on hypertension and diabetes on attention and executive function indexes. No significant differences were found for hypertension and diabetes histories respectively on memory, though non-diabetic and non-hypertensives had higher mean scores than others. We also showed no significant effects of dementia history and clinical depression on attention and visual spatial index. For processing speed and executive function, we found no significant and interaction effects except that of depression on executive function. No interaction effects were found. No significant differences were found for dementia history and depression respectively on memory index. There were significant effects of education and hypertension on MoCA.
Conclusion: Our findings demonstrated relative prevalence of cognitive impairments in our population and contribution of some modifiable risk factors.

P-21: ***ANTI-AMNESIC POTENTIALS OF ETHANOL EXTRACT OF Adenopus breviflorus FRUIT IN SCOPOLAMINE-INDUCED MEMORY IMPAIRMENT IN WISTAR RATS.***

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Background: Memory impairment is a prevalent symptom diagnosed in people having neurodegenerative diseases. *Adenopus breviflorus* fruit is used as an anticonvulsant and pain killer in folkloric medicine. Hence, this study was carried out to evaluate the effect of ethanol extract of *Adenopus breviflorus* (EEAB) on scopolamine-induced memory impairment in rats.
Method: Fruits of *Adenopus breviflorus* were authenticated at Forest Herbarium Ibadan (FHI:112244) and macerated in 70% ethanol. Behavioural tests including the Morris Water maze test and the Y-maze test were used to evaluate cognitive impairment. Animals were grouped into six: Control, Scopolamine (1mg/kg), 50mg/kg of EEAB + Scopolamine (1mg/kg), 100mg/kg of EEAB + Scopolamine (1mg/kg) 200mg/kg of EEAB + Scopolamine (1mg/kg), Donepezil (0.5mg/kg) + Scopolamine (1mg/kg). Biochemical assays for lipid peroxidation using malondialdehyde, glutathione, nitrite, catalase, tumor necrosis factor-alpha (TNF-α), interleukin-6 (IL-6) and acetylcholinesterase (Ache) were carried out. Cresyl violet staining was carried out for the cortical, hippocampal and striatal regions of the brain tissues. Immunohistochemistry was conducted for Nuclear Factor kappa B (NF-κB), Cyclooxygenase 2 (COX-2) and Amyloid Beta (Aβ). Data were analysed using one-way ANOVA.
Result: The results showed that co-administration of EEAB with scopolamine increased the percentage alternation in Y-maze test and reduced the time of first entry into target quadrant at probe trial when compared with the scopolamine group. In the biochemical assays, catalase activity was increased significantly when compared with the scopolamine group while nitrite, malondialdehyhde, TNF- α, IL-6 and acetylcholinesterase activities were attenuated by EEAB when compared with the scopolamine group. Histological analysis using Cresyl violet staining revealed lesser distribution of Nissl bodies within the hippocampus, striatum and prefrontal cortex due to scopolamine. EEAB suppressed the expression of Aβ, COX-2 and NF-κB at the cortex, striatum and hippocampus
Conclusion: This study showed that EEAB possesses anti-amnesic activity via the suppression of proinflammatory cytokines and oxidative stress.

P-22: ***Associations between Technological Experience and Tablet-Based Neurocognitive Test Performance: Data from cognitively impaired South African older adults***

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Background: The South African physician-to-patient ratio of 9:10 000 severely limits the capacity of clinicians to screen, assess, diagnose, and treat dementias. One way to address this limitation is by using mobile health (mHealth) platforms to scale-up neurocognitive testing. *NeuroScreen*, a brief tablet-based cognitive assessment tool that can be administered by lay health-providers, is one such platform. It may help identify patients with cognitive impairment (related, for instance, to dementia) and thereby improve clinical care and outcomes. However, there is little evidence from LMICs regarding (a) the acceptability of this novel tool for delivery of neurocognitive assessments in older adults, and (b) the influence of technology-use experience on NeuroScreen performance of older adults.
Method: Participants were 60 cognitively impaired older adults (63.33% female; age M = 68.90 ± 9.42 years, range = 50–83), recruited from geriatric and memory clinics in Cape Town, South Africa. They completed a study-specific questionnaire assessing acceptability of NeuroScreen use and overall experience with computer-based technology, and were administered the entire NeuroScreen battery.
Results: Although 77% of participants reported never having used a tablet with a touchscreen before, 93% indicated that NeuroScreen was easy to use and 90% indicated they would be comfortable completing the battery at a routine medical visit. Analyses detected statistically significant (or strongly tending toward significant) correlations between technology-use experience and performance on most NeuroScreen subtests that assessed higher-order cognitive functioning and that required the participant to manipulate the tablet themselves: Trail Making 2 (a measure of cognitive switching ability), Visual Discrimination A (complex information processing speed), Visual Discrimination B (pattern recognition), Number Speed (simple information processing speed), .24 £ r £ .37, .002 £ p £ .05. This pattern of significance was not replicated for subtests requiring only verbal input from the participant (i.e., list learning and number span tasks).
Conclusion: NeuroScreen, a tablet-based neurocognitive test battery, appears feasible for use among older South Africans, even if they are cognitively impaired and have limited technological familiarity. However, clinicians and researchers using the battery must bear in mind that performance on certain NeuroScreen subtests might be influenced by the test-taker's degree of technology-use experience.

P-23: ***Primary Health Care providers knowledge of Cognitive Assessment and Tools for geriatric population in Southeast Nigeria: a pilot survey.***

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Background: Primary Health Care (PHC) remains the widely available first point of medical care in Nigeria and other LMICs. Recognizing the rising prevalence of dementia in these settings, PHC providers should be trained on cognitive assessment. About 5% of Nigeria's population are aged 60 years and above; by 2050, individuals in this age group are expected to reach 25 million. Many Nigerians still believe that dementia is part of a normal process of ageing. This thinking leaves people suffering from dementia in a disadvantageous position and is made worse if PHC providers lack skills for cognitive assessment. Training provides will improve dementia diagnosis, treatment, and care of patients and families, as well as driving social change, reducing stigma, and improving optimism and dignity for elders. The objective is to assess PHC provider knowledge of cognitive assessment tools in Southeast Nigeria.
Method: This is a cross sectional mixed method descriptive pilot survey carried out in a Comprehensive Healthcare Centre (CHC) affiliated with Nnamdi Azikiwe University Teaching Hospital (NAUTH) in preparation for the introduction of a battery cognitive testing tool. Fifty healthcare workers participated. Convenience sampling was employed involving all consenting PHC providers in CHC-NAUTH. A structured questionnaire was distributed for generation of both qualitative and quantitative data.
Result: The mean age of the 50 PHC providers was 36.6 years, with females constituting 80%. The highest educational qualification was Fellowship (Post Part 2 residency certificate/consultant), comprising 52% of participants, followed by Senior Registrars (24%), and high school diploma the least 2.0%. Mean practice duration was 10.8 years. The mean age to need a cognitive assessment was 52.8 years, across respondents. No respondents were familiar with Montreal Cognitive Assessment or any form of Tablet Based Cognitive Assessment Tool. Most (86%) knew about the Mini Mental State Examination.
Conclusion: There is an urgent need to introduce and implement cognitive assessment in Primary Health Care. This would start by providing healthcare workers with training as well as culturally validated cognitive assessment tool. This would improve diagnosis, management, and care for cognitive impairment, as well as clinically demystify cognitive impairment.

P-24: ***Imaging Dementia in African Populations: Closing the Gap on Challenges - A perspective***

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Background: Globally, population ageing is increasing and consequently, non-communicable diseases (NCDs) including Alzheimer's Disease and Related Dementia (ADRD) are on the rise *(WHO 2021).* In the next two decades, low-and-middle-income countries (LMICs) such as Sub-Saharan Africa (SSA) are projected to have the highest number of people living with dementia *(WHO 2017).* Neuroimaging, particularly Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) are established diagnostic tools of significant importance to characterizing ADRD. Though significant, the use of these imaging tools in dementia research is not well known globally, particularly in SSA.
Method: We reviewed clinical studies on ADRD neuroimaging including registered ongoing trials to present a global dementia imaging research landscape based on total number of study sites, trial participants, and capacity (participants/site). Within SSA, we conducted Medline and Embase keyword searches ('Alzheimer's disease', 'Cognitive impairment', 'Dementia') to identify MRI or PET studies performed across the region (Figure1). Finally, we provide our perspective on the dementia resources (infrastructure and competencies) required to conduct comparable ADRD research in African populations.
Result: Only 30 countries (~15% of all countries in the world) account for global ADRD neuroimaging research. While the US has the highest number of study sites, capacity for ADRD was highest in India. Overall SSA had the lowest capacity for ADRD research with only 39 original studies (Figure2), of which 9 used MRI only and none used PET. These imaging studies were either evaluating Human Immunodeficiency Virus Associated Neurocognitive Disorder (6/9) or investigating Post Stroke Cognitive Impairment (3/9). The overwhelming majority of dementia research in SSA were non-imaging epidemiology or dementia care studies (28/39). The composition of resources required to achieve comparable global ADRD research in SSA are highlighted in Figure 3.
Conclusion: The current global ADRD research landscape mirrors neuroimaging capacity and is dominated by the Global North. The moderate to high ADRD neuroimaging capacity in LMICs such as India and Peru demonstrate the impact of capacity building in low-resourced settings. Within SSA, the composition of resources required for valuable ADRD research suggests priorities for developing neuroimaging capacity should be central to ongoing efforts to promote global ADRD research.

P-25: ***Predictors and Outcomes of Discordance Between Pre-PET Clinical Diagnosis and Amyloid-PET Results in the Imaging Dementia—Evidence for Amyloid Scanning (IDEAS) Study***

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Objective: Discordance between the clinical diagnosis of Alzheimer's disease (AD) by experts at specialty centers and AD pathology on autopsy is over 20%. New advances in AD biomarkers, including amyloid-PET, offer an opportunity for improved in vivo diagnosis. However, widespread use of such diagnostic tools is currently limited by cost. We sought to characterize clinical situations where AD biomarkers would be most valuable by identifying predictors and outcomes associated with discordance between clinical diagnosis pre-PET and amyloid-PET scan results in the largest community-based study of amyloid PET clinical utility.

Methods: The Imaging Dementia—Evidence for Amyloid Scanning (IDEAS) study was a community-based, multisite study that assessed the association between amyloid PET and subsequent changes in clinical management. IDEAS participants met appropriate use criteria for amyloid-PET (cognitive impairment of unknown etiology, AD on differential). 946 dementia specialists at 595 sites in the US enrolled 11,829 participants who completed both pre/post-PET visits (age 76±6, 51% female, 88% White, MMSE 24.5±5). Specialists documented clinical diagnosis and management plan before and after PET. Diagnosis-PET discordance was defined as either an AD diagnosis pre-PET with subsequently negative amyloid-PET, or a non-AD diagnosis pre-PET with positive amyloid-PET. Univariate logistic regressions were performed to compare predictors and outcomes of discordance versus concordance in the total sample and in subgroups stratified by pre-PET diagnosis (AD/non-AD).

Results: Diagnosis-PET discordance occurred in 40% of total participants (n=4732), including 36% with AD pre-PET clinical diagnosis and negative amyloid-PET (n=3323/9115) and 52% with non-AD pre-PET diagnosis and positive amyloid-PET (n=1409/2714). In the total sample, predictors associated with greater discordance included non-White race (Black/African American: OR 1.26; 95%CI [1.04-1.53]; Asian: (1.62[1.23-2.13]) and more medical comorbidities (each comorbidity: 1.07[1.05-1.07]). Predictors associated with less discordance included older age (5-year increase: 0.91[0.89-0.94]), female sex (0.91[0.85-0.98]), greater disease severity (0.70[0.65-0.75]), greater disease duration (≥3yr: 0.64[0.59-0.69]), greater physician diagnostic confidence (0.89[0.86-0.89]), AD medication use (0.64[0.59-0.69]), family history of dementia (0.89[0.81-0.97]), and greater physician time(≥50%) in dementia care (0.92[0.86-0.99]). Subgroup analyses revealed additional predictors associated with greater discordance in those diagnosed with AD include Hispanic ethnicity (1.35[1.10-1.66]) and living alone (1.16[1.04-1.30]). Subgroup analyses revealed that a positive amyloid PET scan was associated with greater change in overall management in both pre-PET diagnostic groups.

Discussion: These results support the use of AD biomarkers as clinical tools to aid in the diagnostic evaluation and management of patients with cognitive impairment. There was a high frequency of discordance between clinical diagnosis after evaluation by dementia specialists and subsequent AD biomarker results, and more frequent changes in management when AD biomarkers were positive. AD biomarkers may be more valuable to confirm AD diagnosis in participants who are early in the disease course, younger, from underrepresented racial/ethnic groups, live alone, have multiple medical comorbidities, and lack a suggestive family history. The study was limited to a US population, which highlights the need for future studies of AD biomarkers in LMIC.

P-26: ***The Therapeutic Potential of Neural Stem Cells on D-galactose- and Lead-Induced Alzheimer-like Disease in a Rat Model***

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Background: Alzheimer's disease (AD) has been reported as the most prevalent neurodegenerative disease affecting elderly people and worsening the global economic burden related to the ageing society. Transplantation of Neural Stem Cells (NSC) m*ay* however become a potent approach to curing neurodegenerative diseases via repairing and replenishing functional neurons. Hence, this proposed study is aimed at evaluating the therapeutic potential of NSC on D-galactose- and lead-induced Alzheimer-like disease in a rat model.
Method: Thirty (30) rats will be obtained, acclimatized for one week, randomly divided into five groups (n = 5, control: n = 10) and administered with lead (Pb^{2+} 250 mg/kg.bwt) and D-galactose (D-gal 60mg/kg.bwt) for 8 weeks. Before the Alzheimer's disease induction in the animal model, rats will be trained for 1 week using 8-ARWM and object recognition paradigms. The same procedure will be repeated after the induction of Alzheimer's disease in the model. Neural stem cells will be transplanted into the rats, and 8 weeks after transplantation, a cognitive function test will be performed using 8-ARWM as well as object recognition tests before the animals will be sacrificed. The levels of APOE, β-secretase, Aβ42, TNF-α, GFAP, BDNF, and NF-κB will be determined using ELISA kits. The following procedures will be carried out: differentiation of engrafted NSC in vivo after eight weeks of NSC transplantation, using coexpressing EGFP with Tuj1, GFAP, and GalC; and engrafted NSC differentiated into neurons (EGFP-hochest33342) in the hippocampal region and expression of synaptic proteins using coexpression of EGFP with GAP-43 as well as expression of SYN.
Result: Novel theories/New findings/Knowledge. The outcome of this study may provide a platform using neural stem cell therapy in the prevention and treatment of Alzheimer's disease. Data from this study may be beneficial to other researchers in neuroscience, especially as it relates to cognitive functions and neurodegeneration.
Conclusion: The findings suggest that NSC therapy might recover memory loss in Alzheimer-like disease in a rat model, possibly by regulating amyloid beta production and inhibiting neuroinflammation through new neural circuits.

P-27: ***Role alteration, coping strategies, and resource accessibility of south asian care partners of individuals with brain health conditions during the COVID-19 pandemic.***

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Background: COVID-19 has impacted the psychosocial and well-being of informal care partners of individuals living with brain health conditions. This qualitative study aims to identify South Asian care-partners' experience in care provision during the COVID-19 pandemic, coping strategies utilization, and access to resources and supports.
Methods: We utilized Braun and Clarke's thematic analysis framework to identify repeated patterns in the narratives of informal care partners. We conducted a secondary data analysis of 245 informal care partners obtained from a self-administered survey, *Coping with Loneliness, Isolation, and COVID-19*, from India, Pakistan, and Bangladesh.
Results: The inductive thematic analysis produced three themes (1) *role and self alteration, (2) coping strategies, and (3) resource/support accessibility*. Theme one includes logistical challenges in providing care (i.e., movement and resource limitation), difficulties in COVID-19 care compliance (i.e., mask mandate and precautionary measure confusion), adaptation to the COVID-19 situation (i.e., collective caregiving effort and reliance on virtual-platform) and mental health impact of caregiving (i.e., loneliness and anxiety). Coping strategies include positive reframing (i.e., hope for pandemic cessation and positive thinking practices), reliance on belief systems (i.e., sense of pride and duty), and self-enrichment activities. Theme three includes access to social support, assistance, and resources.
Conclusion: The COVID-19 pandemic has elucidated the complexity of caregiving. Our result indicates the need for a safety net for basic amenities and access to healthcare, health education on COVID-19 preventive measures specific to care recipients' brain health condition, and accessible mental health and social support. Cultural and religious values have helped care-partners to cope during the pandemic. More research is needed to examine the cultural variation of caregiving to address the impact of the pandemic and create comprehensive policy responses.

P28: Predictors and reasons for discontinuity of care among people diagnosed with dementia in a memory clinic in South West Nigeria

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Background: Continuity of care is essential for people diagnosed with dementia (PWD) as it reduces hospitalization and emergency care rates and allows them to assess some form of post-diagnostic support
Method: A cross-sectional study using mixed method approach to examine the predictors and explore the reasons for discontinuity of care among PWD who were lost to follow-up at a memory clinic. Records of PWD were identified and their caregivers' contact were extracted. Using a semi-structured questionnaire, socio-demographic and clinical details, and number of clinic visits were extracted from the records; while the status of PWD (dead/alive), reason for discontinuity of care and post-diagnostic support received were obtained via telephone interviews to the caregivers. We determined the predictors of discontinuation of care using logistic regression analysis with p-value set at <.05. To explore the reasons for discontinuity of care, Key Informant Interviews (KII) were conducted for 10 caregivers of PWD selected purposively
Result: A total of 155 PWD discontinued care between January 2016 and December 2021. About 38.7% had died, 54.8% returned more than once after diagnosis for routine check-up. Presence of comorbidity predicted discontinuity of care (OR 1.94; C.I 1.12- 3.35, p=0.02). The most common reason for discontinuity from the telephone interview was caregiver not available to bring PWD to the clinic (36.1%). Themes that emerged from KII on reasons for discontinuity of care include disappointment in realizing that dementia had no cure, perception that services available could not adequately provide the needed support for PWD, satisfaction with resolution of behavioral problems which was the main reason for accessing treatment at the clinic and caregivers' unavailability to accompany PWD to clinic due to their work-schedule. The implication was that PWD could not utilize some of the post-diagnostic support provided by the clinic.
Conclusion: A number of reasons were responsible for the discontinuity of dementia care in this setting. There is a need to identify the needs of PWD and their caregivers to tailor services that can effectively meet their needs in the community.

P-29: ***Social determinants as risk factors for dementia using ELSI-Brazil cohort data***

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Background:
Social determinants of dementia have been increasingly recognized globally. Altogether, they presented important risk factors of dementia. This study aimed to identify the association between six socioeconomic and environmental variables with dementia in Brazil.
Method:
Individuals included in a large-scale Brazilian Longitudinal Health study (ELSI-Brazil) composed a sample of 9017 individuals with complete responses, with 63.06 (+-9.72) years of age, 5.45 (+-4.29) years of education and a majority of women (5067, 56.19%). Social determinants of health were extracted, including illiteracy, education lower than 5 years, household income, canned water, access to healthcare and neighborhood safety. Individuals were included in the dementia group when they presented the following criteria: a brief cognitive screening (using category fluency test) score below normative data for age and education, associated with a Katz scale score below 6. A multivariate logistic regression was performed to measure the social determinants of health that predict dementia. Data is showed in Odds Ratio [95% Confidence Interval].
Result:
There were 712 (7.9%) individuals that matched the epidemiological criteria for dementia. Social determinants of health were heterogeneously different between individuals with and without dementia: illiteracy (OR 1.4 [1.18, 1.66]), education lower than 5 years (OR 1.66 [1.24, 2.22] and household income (OR 0.94 [0.92, 0.97]) were predictors of dementia ($p<0.001$), while canned water, access to healthcare and neighborhood safety did not show significant difference between groups ($p>0.05$).
Conclusion:
Social determinants of health such as illiteracy, lower education and household income were associated with dementia in Brazil. These findings reinforce the need for public policies that improve educational access and reduce social inequality in low-and middle-income countries. Further studies are needed to identify other social risk factors that impact the development of dementia.

P-30: ***A triangulated study on the non-pharmacological management of Alzheimer's disease in Mauritius.***

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Background: Mauritius has an elderly population of about 20% above 60yrs. There are around 14,000 people with dementia and Alzheimer's disease. Exact data are not available. Very little improvement is found with pharmacological management, therefore, non-pharmacological management is of greater interest.
Method: Mixed data studies in which both quantitative and qualitative methods are used. Mixed studies where data are matched for 'similarities' and unmatched data obtained for 'dissimilarities'. The set of data obtained is very rich and new. A good understanding of raw data is important for triangulation to emerge in research.
Result: Mixed studies has yield in more quality data and in- depth analysis. It was possible to find new emerging facets and dimensions in the non-pharmacological management of Alzheimer's disease. Emotions are captured with an effort to understand the lived experiences of the person living with dementia. These have no statistical correlation to data.
Conclusion: The non-pharmacological management of this group of people demands a coordination among various dimensions of living and adapting to changes. The biopsychosocial model of life is necessary for a good quality care.

P-31: ***The value of trainee career development as the focus of collaborations between neurology centers from high and low resource countries***

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Background: There are many academic faculty in neurology centers at high resource countries who have family or other ties to low resource countries. The Partnering Epilepsy Centers in the Americas (PECA) was a program created in 2007 and sponsored by the North American Region of the International League of Epilepsy (ILAE). PECA was funded by a foundation grant to the author, and it subsequently received additional funding from ILAE for continuing this initiative. The intent of this initiative was to establish collaborations between Epilepsy centers in North America and Latin America by providing small seeding grants.
Method: Between 2008 and 2015, annual call for proposals for seeding grants of $5,000 each were distributed by the North American (NA) and Latin American (LA) Regional Councils of the ILAE to their members. Proposals were evaluated by an ILAE committee. Factors considered included institutional commitment from the high resource center such as matching funds. Every year, 4-6 collaborations between NA and LA were chosen.
Result: Thirty-six collaborations were funded and established over the 8 year-period. Several of them consisted of repeated visits from Latin America trainees and/or faculty to North American congresses and centers. Several collaborations utilized monthly virtual conferences which included case reviews from low resource locations by NA faculty. Other collaborations were visits from North American faculty to participate in local or regional conferences. After 12 years, the three most successful collaborations as measured by self-sustainability of the collaboration until 2021-22 included two factors: 1) an expat senior leader who was passionate about career development, and 2) a deliberate focus upon training of senior residents and junior faculty in the low-resource country.
Conclusion: The most successful collaborations between neurological centers in a high and low resource countries in the PECA were driven by a passionate senior leader but they primarily focused upon the training of the next generation of neurological academic faculty in the low-resource country.

P-32: ***Cognitive Stimulation Therapy for older people with Dementia in Africa: A Scoping Review***

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Background: We aimed to investigate the existing evidence on Cognitive Stimulation Training in Africa (CST) among older people living with dementia in Africa.
Method: We conducted a systematic search of published literature on CST delivered to older people with dementia in Africa from 2000-2021. We searched electronic sources including MEDLINE (PubMed), CINAHL (EBSCOhost), and PsycINFO. The eligibility criteria were as follows: the intervention was CST; the study population was people with dementia; delivered in Africa, and peer-reviewed and published in English. A narrative approach was taken to chart, synthesize and interpret the data using Microsoft Excel.
Result: After removing duplicates using Endnote, a total of 122 studies were retained and screened first by title, then abstract, and finally by full text. Seven articles matched the inclusion/exclusion criteria. CST has been adapted and piloted in two African countries (Nigeria and Tanzania). Although there are some barriers to overcome, CST has significant facilitators. CST studies in Africa indicate improvements in clinical outcomes including cognition and quality of life.
Conclusion: CST is feasible, adaptable, and acceptable. CST is effective, has barriers, and facilitators. Further research is needed to test the effectiveness of CST in African contexts.

P-33: ***Immunomodulatory Role of African Mistletoe Lectins on Microglial Activity following Lipopolysaccharide Exposure***

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[1]University of Lagos, Lagos, Nigeria, [2]Afe Babalola University, Ado Ekiti, Nigeria.

Background: Mistletoes are hemiparasitic plants with immunomodulatory capacities in treating conditions such as cancers. Microglia, immunocompetent resident macrophages of the central nervous system are critical for brain health, and their dysregulation which promotes neuroinflammation has been implicated in the pathogenesis of neurodegenerative disorders including Alzheimer's dementia. We investigated the possible role of African mistletoe lectins (AML) as a modulator of microglial activity following lipopolysaccharide (LPS) exposure.
Method: Mouse BV-2 microglial cells were cultured in DMEM supplemented with 10% heat-inactivated foetal bovine serum (FBS) and 0.1% penicillin-streptomycin at 37°C in a humidified atmosphere of 5% CO2 and 95% air. 5.0 × 105 cells/mL (100 µL/well) were plated in 96 well plates and incubated for 24 h to attach. After 24 h, cells were incubated with different concentrations of AML (1000, 500, 250, 125, and 62.5 ng/mL) for another 24 h. After 24 h, 20 µL of Alamar Blue solution was added and the plate was incubated again for 4 h. The fluorescent signal was monitored using 550 nm excitation and 580 nm emission wavelengths. To determine the potential modulatory role of AML, LPS-exposed BV-2 cells were treated with 1000 and 500 ng/mL of AML for 48 h following LPS exposure. BV-2 cells were thereafter processed for immunohistochemistry.
Result: Treatment with AML following LPS exposure promoted microglial cell viability and enhanced the anti-inflammatory activity of the BV-2 cells as seen in increased expression of CD-45 receptors
Conclusion: This study suggests that reinforcing the activity of the CNS resident macrophages, microglia, using agents like AML could potentially delay or prevent microgliosis-driven pathologies as seen in Alzheimer's disease.

P-34: ***Factors associated with changes in emotional and social loneliness among Latin American family care partners of people with dementia and other long-term conditions during Covid-19***

Tomas Leon[1], **Thamara Tapia-Muñoz**[2,3], Andrea Slachevsky[4,5,6,7], Bárbara Costa Beber[8], Carla Nubia[9], Mireya Vilar-Compte[10], Pablo Gaitan[11], Loreto Olavarria[12], Loreto Castro[13], Alejandra Pinto[1], Yaohua Sophie Chen[14], Emilia Grycuk[15], Iracema Leroi[16,17], Brian Lawlor[16], Claudia Duran-Aniotz[18,19,20], Roger O'Sullivan[21,22], and Claudia Miranda-Castillo[2,23]

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Objectives: To analyse the impact of the COVID-19 pandemic on the loneliness levels of Latin American care partners and explore differences between care partners of people with dementia compared to those of people with other enduring health conditions.
Background: COVID-19-related restrictions led to an increase in loneliness and social isolation Historically, dementia care partners present worse mental health and higher burden than non-dementia care partners.
Design: This was a sub-study of the 'Coping with Loneliness and Isolation during COVID-19' (CLIC) Study, an international self-report survey of 5236 care partners during the COVID-19 pandemic.
Setting: People living at home in one of three Latin American countries: Mexico, Chile and Brazil
Participants: We analysed data from 241 care partners living in Latin American countries who responded to the CLIC Study survey.
Methods: We used longitudinal multinomial and linear regression models to identify factors modifying the changes in loneliness scores.
Results: Compared to pre-pandemic, there was a significant increase in the prevalence of self-reported total loneliness among care partners, and the levels of social and emotional loneliness between care partners of people with dementia vs other conditions did not differ in their increment of total, emotional and social loneliness. Low education and low perception of mental health increased the risk of care partner loneliness during the COVID-19 pandemic.
Conclusions: The increase in loneliness during the pandemic was similar across care partners. Some groups are at special risk for higher levels of loneliness and should be considered when planning public health interventions for major societal disruptions, such as a pandemic, in the future.

P-35-:Tapinanthus cordifolius abrogates gastrointestinal dysregularion via the modulation of enteric inflammation and neurtrophin signaling in a mouse model of Alzheimer's disease

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Background: Different species of mistletoes including *Tapinanthus cordifolius* are hemiparasitic plants shown to be effective in the management of several conditions, including diabetes, cancers, and neurological disorders. There is growing evidence that suggests the involvement of the intestinal system in the pathogenesis of Alzheimer's disease, and this correlates with the gastrointestinal disturbances reported in Alzheimer's patients. These disturbances are reportedly exacerbated with the current treatment options for AD.
We evaluated the impacts of lectins obtained from *Tapinanthus cordifolius* (AML) on enteric inflammation (intestinal macrophages, inflammatory cytokines expression), neurotrophic factors expressions (brain-derived neurotrophic factor; BDNF, glial cell-derived neurotrophic factor; GDNF), enteric glia activation, intestinal amyloid beta protein and phosphorylated tau concentrations following exposure to lipopolysaccharide (LPS).
Method: 30 adult male C57BL/6 mice were allotted into 6 groups (A – F; n=5) and treated as follows: A (Control —received distilled water); B (LPS —injected 0.25 mg/kg LPS intraperitoneally); C (AML+LPS —treated with 1000 ng/kg of AML simultaneously with 0.25 mg/kg of LPS); D (LPS/AML —post-treated with AML following LPS exposure); E (DON+LPS —treated with a reference drug, donepezil (DON), 3 mg/kg simultaneously with 0.25 mg/kg of LPS); F (LPS/DON —post-treated with DON following LPS exposure). Animals were euthanised and the small intestine collected and processed for biochemical, histological, immunohistochemical and immunofluorescence investigations
Result: LPS exposure upregulated intestinal proinflammatory cytokine activity, amyloid-beta level, enteric glia, and intestinal macrophages expression. Furthermore, there was a corresponding depletion of intestinal neurotrophins (BDNF and GDNF) concentrations following LPS exposure. These dysregulations were attenuated with AML treatment
Conclusion: Our findings suggest that the intestinal system could be targeted in delaying or preventing the pathophysiological changes seen in AD and that AML could be further explored as a therapeutic candidate for AD and its associated morbidities

P-36: Dementia Training Academy for Clinicians in South Asia: Outcomes and Impacts

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Background: Nearly 4% of the world's dementia population resides in Bangladesh while India holds almost 3%, both with limited resources. The purpose is to provide training to the clinicians so that they can provide services with up to date information regarding dementia identification, treatment and management

Method: A 5-month online training course was developed and delivered twice (2021-2022) in Bangladesh and India. The courses consist of 8 themes (29 pre-recorded lectures), 4 live interactive case-based discussions, prescribed reading, quizzes and an online chat forum. Delegates were invited to develop a local Quality Improvement (QI) project related to dementia. Lectures were delivered by international experts from 9 countries with an emphasis on country-specific content. Evaluation was based on New World Kirkpatrick Four-Level Training Evaluation Model (2016).

Result:

<u>2021 Pilot -</u>

20 professionals from Bangladesh trained. Course completion rate - 75%.

Level 1 (Reaction) evaluation - high satisfaction with course content, delivery and utility. 80% attended live interactive sessions and 90% participated in online group chat.

Level 2 (Learning) feedback - significant impact on knowledge, attitudes and practices of dementia post course compared to baseline.

Level 3 (Behaviour) - most delegates prepared an individual or team QI proposal for dementia fostering further networking. Positive delegate feedback on training effectiveness. Delegates have also reported changing practice to include dementia care by implementing learning in clinical settings, and development of professional networks around dementia.

Level 4 (Results), referring to longer-term impact on Bangladeshi dementia care and services, will be evaluated over time.

<u>2022 Expansion -</u>

Course expanded to India in 2022. 44 professionals currently undergoing training. (15 from Bangladesh 27 from India).

Conclusion: The course improved dementia Knowledge-Attitude-Practices among clinicians in resource-poor areas and empowered them to network and spread knowledge of best practices, contributing to filling the gap in Bangladeshi dementia resources. This acted as an evidence base to expand the course to India to bring similar benefits.

P-37: ***LATE ONSET VITILIGO AND MENTAL HEALTH AMONG THE ELDERLY IN NIGERIA.***

Victor Nwinee

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Background: Skin diseases pose a sense of stress and concern by its sufferers and has implication on their mental health. Vitiligo is an acquired, idiopathic, non-infectious, autoimmune, and chronic skin disease characterized by depigmentation of the skin.1% of the world's population have vitiligo, that's more the population of Ghana, Senegal, and Cameroun or that of Canada, Australia and Finland put together. Vitiligo has an early onset at 10-20years, and a late onset from age 40.
According to a 2014 global press journal report, Nigeria has the highest number of people with vitiligo in Africa. In people with dark and brown skin, this disease is a very striking and glaring condition that portends worry, and stigma to the sufferers, as many associate this with leprosy. Even though several research has been done on this pathology, vitiligo in the elderly in Nigeria is not well documented and is a cause of mental health concern in the older population accompanied with a lot of misunderstanding and misinformation about the disorder, which has led to stigmatization and exclusion of the vulnerable and frail elderly population who suffer from it.
Method: This is a systematic review study that will review research on skin conditions/ vitiligo in Nigeria and West Africa among elderly people. Publications from 2012 till date which addresses skin conditions and mental health among the elderly (60years and above) with a focus in the African population will be selected for review. The proposed study will extract data on the mental health perception, and attitudes on vitiligo among elderly people in Africa.
Result: This study seeks to review the mental health impact of late onset vitiligo of the elderly in Nigeria as an impetus for incorporating psychotherapy in the care of such patients and improve the public knowledge about the condition.
Conclusion: Late onset vitiligo in the elderly impacts negatively on the mental health of those affected. Improved public knowledge and perception will mitigate against stigmatization ,while care of such patients should take into consideration their mental health not only their cosmetic outlook.

P-38: Neuroanatomical Substrates of Apathy in Dementia

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Background: Apathy is a multidimensional syndrome that impairs motivation and behavioural regulation mechanisms. As apathy is almost ubiquitous in neurodegenerative disorders, exploring its neural basis is required to better understand the origin of the clinical presentation.
Objective: To investigate brain regions associated with apathy in patients with Alzheimer's disease (AD) and behavioural variant Frontotemporal Dementia (bvFTD).
Methods: Participants were recruited in the city of Belo Horizonte (Brazil). 19 patients with AD,20 patients with bvFTD, and another 20 controls (GC), matched for age, sex, education, and time of disease were included. Participants underwent a full clinical and neuropsychological assessment and a 3T MRI acquisition. Neuroimaging was processed in the FreeSurfer software, and brain volume (mm3) was obtained for 68 cortical regions (34 per hemisphere) for each participant. To account for interindividual variation in the intracranial total volume (ITV), an index was calculated by dividing raw volume for the ITV. Such index was then correlated with the Starkstein Apathy Score (SAS) for each group. When suitable, a linear regression model was created to better understand the weight of each region for SAS results.
Results: AD and bvFTD had a worse cognitive performance, with bvFTD presenting a slightly more dysexecutive profile compared to AD. For AD, apathy score moderately correlated with parahippocampal, superior temporal and temporal pole in the left hemisphere, and the insula in the right hemisphere. However, the regression model identified that only the right insula statistically weighted for the SAS score ($F(4,14) = 4.437$; $p=0.017$; $R^2=0.559$). For bvFTD, SAS correlated only with right medial orbitofrontal volume ($rho = -0.454$; $p<0.05$).
Conclusions: Our results show that apathy is associated with specific cortical regions according to each disorder. Right medial orbitrofrontal region is more relevant for bvFTD apathetic profile. Orbitofrontal cortex is typically associated with social cognition and inhibitory control. For AD, the insular region is more relevant, a hub associated with sensorimotor function, and elements of socio-emotional processing by bodily emotional experience. This different pattern of association with apathy helps us to understand the different profile of apathy in both groups. Further investigations will include subcortical regions into the model.

P-39: ***Investigation of the interaction among psychosocial and behavioral factors, cognition, aging, and Alzheimer's Disease and related Dementias from a translational research perspective***

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Background: Based on our previous work, we identified an association between neuropsychiatric symptoms and dementia status in older Hispanics/Latinos in the Maracaibo Aging Study (MAS). Specifically, prevalence of NPI symptoms was higher in individuals with dementia compared to individuals without, providing evidence of a link between behavioral traits and cognition in Hispanics/Latinos. A major goal of the present study is to use a translational research perspective to bridge the gap between biological substrates and behavioral and cognitive changes that are associated with Alzheimer's Disease and related Dementias (ADRD) in Hispanics/Latinos.
Methods: Informed by our MAS findings, we identified key behavioral, personal, and cognitive variables that are most impacted in Hispanics/Latinos. We then designed studies to explore the biology of the interaction among personality traits, affective states, cognition, and aging using nontraditional animal models and appropriate statistical approaches. A factorial repeated-measures ANOVA was used to analyze learning and memory data.
Results: In our models, we found no effect of age on performance in a standard olfactory-based learning task. Interesting, there was a significant effect of age on individual (social) recognition ($p<0.05$); older individuals exhibited deficits in individual recognition compared to younger individuals. We are currently investigating the impact of biological sex on cognition and behavior in our models, and how this interaction is influenced by age. We also plan to integrate information from our human subjects research with information obtained from our basic neuroscience studies.
Conclusions: The Rio Grande Valley Alzheimer's Disease Resource Center for Minority Aging Research (AD-RCMAR) has established a strong collaborative network in South Texas (on the U.S.-Mexico border) that encourages innovative thinking across the translational research spectrum. Our team includes neuroscientists, clinicians, geneticists, and public health researchers. Our previous work and the present preliminary data indicate that psychosocial factors, personality, affective states, and gender/biological sex interact with the aging brain and cognitive processes. We propose a translational research perspective and transdisciplinary approach to identify the biological mechanisms that underlie the association among psychosocial and individual factors, cognition, and aging in a cultural context that is relevant to Hispanics/Latinos and other under-served communities across the globe that are burdened with ADRD.

P-40: ***Demographic characteristics in families with APP V717I and PSEN1 A431E variants in Jalisco, México***

Isaac Enrique Berumen-Ocegueda[1], Angélica Zuno Reyes[2], Maribel Orozco[1], Sofia Dumois-Petersen[1], Ana Karen Preciado-Baron[1], Karina Pérez-Rubio[1], Geovany Cornejo-Loera[1], Victor J. Sánchez González[1], Luis Eduardo Figuera-Villanueva[1,3], Lourdes Ramírez Dueñas[1], John M Ringman[4], and **Esmeralda Matute**[5]

[1]Universidad de Guadalajara, Guadalajara, JA, Mexico, [2]Universidad de Guadalajara, Guadalajara, Mexico, [3]Instituto Mexicano del Seguro Social, Guadalajara, JA, Mexico, [4]Keck School of Medicine, University of Southern California, Los Angeles, CA, USA, [5]Instituto de Neurociencias, CUCBA, Universidad de Guadalajara, Guadalajara, JA, Mexico.

Background: Two Autosomal Dominant Alzheimer´s Disease (ADAD) variants have been reported in Jalisco, México, the Presenilin1 (*PSEN1*) A431E and the amyloid precursor protein gene (*APP*) V717I. However, the demographic information about these families is scarce. Therefor, we aimed to identify the demographic characteristics in families with the *APP* V717I or *PSEN1* A431E variants in Jalisco, México.
Method: Eighty-eight residents from Jalisco with at least one first-degree relative with ADAD were recruited between 2017 and 2022. Pedigrees were drawn from information given by index cases or caregivers, allowing us to integrate other family members.
Result: We identified 29 families (*APP*=9, *PSEN1*=20) with at least one progenitor with ADAD. All together are 1234 family members (*APP*=304, *PSEN1*=930). From them, 96 (*APP*=26, *PSEN1*=70) were reported with clinical manifestations. Families size ranges between 6 to 76 members in *APP* and 8 to 253 members in *PSEN1* and includes III to VI generations. Most of the family members are reported to be still alive (*APP*=270, *PSEN1*=553), and up to 41% (*APP*=69, *PSEN1*=188) are younger than 18 years old. In the *APP* pedigrees, 162(57%) are female, whereas 398(50%) are in the *PSEN1* pedigrees. Up to now, only 61 (*APP*=37, *PSEN1*=24) of these family members have a molecular analysis to identify the studied variants; of them, 14 were identified as *APP* and 13 as *PSEN1* carriers.
Conclusion: We identified a vast number of family members at risk of inheriting the studied variants; almost half are children; however, there is limited genetic and psychological support for decision-making related to their well-being and family planning.

PARTCIPANTS AND REGISTRANTS OF DEMENTIA IN LMICs 2022 SYMPOSIUM

FORMATTED_NAME	COUNTRY	Employer/Institution or Organization Name
Abey, Meron	Ethiopia	Global Brain Health Institution
Abozid, Yara	Egypt	IBRO
Abuelezz, Nermeen	Egypt	Misr University for Science &Technology
Acosta, Daisy	Dominican Republic	Daisy Acosta
Adams, Larry	United States	University of Miami
Adedayo, Lawrence	Nigeria	Bowen University Iwo
ADETUNJI, OPEYEMI	Nigeria	Babcock University
ADOUKONOU, Thierry	Benin	Université de Parakou
Agbon, Abel Nosereme	Nigeria	Ahmadu Bello University, Zaria, Nigeria
Aguilar, Sara	Mexico	Instituto Nacional de Nutrición
Ahmed, Mohamed	Egypt	Mohamed Ahmed
Ajiboye, Olaolu Joseph	Nigeria	Babcock University
Akindejoye, Funmi	Nigeria	ARTS IN MEDICINE PROJECTS
Akinwande, Kazeem	Nigeria	Federal Medical Centre Abeokuta, Ogun St
Akinyelure, Feyikemi	Nigeria	Federal Neuro-Psychiatric Hospital, Yaba
AKINYEMI, JOSHUA	Nigeria	University of Ibadan
Akinyemi, Rufus	Nigeria	University of Ibadan, College of Medicin
AKPA, ONOJA	Nigeria	University of Ibadan, Nigeria
AL-GHURABI, RASHAD	Egypt	Cairo university
Alam, Syeda Fatema	Bangladesh	Dhaka Medical College Hospital
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