



WORLD NEUROLOGY

THE OFFICIAL NEWSLETTER OF THE WORLD FEDERATION OF NEUROLOGY

Brain Health Without Borders

WFN strengthens global partnerships and builds on its brain health advocacy at the second meeting of the International Alliance on Brain Health.

BY CLAUDIO L.A. BASSETTI, STEVEN LEWIS, ESTER PIOVESANA, FACUNDO MANES, AND RIADH GOUIDER

The second meeting of the International Alliance on Brain Health (IABH), held April 24-25, 2026, in Buenos Aires, Argentina, convened an extraordinary international community of neurologists, psychiatrists, neuroscientists, rehabilitation experts, public health leaders, and policymakers from five continents. Organized jointly by the Swiss Brain Health Foundation and the Institute of Cognitive Neurology (INECO) Foundation, the meeting emerged as one of the largest multidisciplinary forums dedicated to brain health to date.

More than a scientific congress, the gathering reflected a growing international recognition that brain health represents one of the defining medical, societal, and economic challenges of the 21st century. Across disciplines and regions, participants shared a common conviction: protecting the brain requires new forms of coordination capable of bridging conventional boundaries between neurology, psychiatry, rehabilitation, and public health.

The meeting was held under the patronage of the World Federation of Neurology (WFN) and the World Psychiatric Association (WPA). The WFN's prominent role underscored its expanding leadership in international

brain health advocacy and its commitment to fostering connected approaches to neurological and mental health worldwide.

The Buenos Aires meeting coincided with the 20th anniversary of the INECO Foundation and followed significant legislative initiatives in Argentina aimed at developing one of Latin America's first comprehensive national frameworks for brain health and dementia prevention. Interest in the event was remarkable: More than 1,000 participants preregistered, including 359 in-person attendees and hundreds of virtual participants representing 24 countries from five continents. Forty-five internationally recognized speakers contributed to the scientific program.

WFN Leadership and a New Era of Collaboration

The WFN was prominently represented throughout the meeting. WFN President Prof. Steven Lewis joined leaders from the WPA, the American Academy of Neurology, the European Academy of Neurology, the European Psychiatric Association, the Alzheimer's Association, the American Heart Association, and the World Health Organization (WHO).

The IABH, formally established in 2025 with support from the Swiss Brain Health Foundation and under the patronage of the WFN and WPA, represents both

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Members of the International Alliance on Brain Health at the second meeting April 24-25 in Buenos Aires.



From left to right: Dr. Steven Lewis, Prof. Paul Boon, and Prof. Claudio L.A. Bassetti discuss brain health issues.

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a symbolic and practical step toward closer alignment between neurology and psychiatry. As emphasized in the alliance's founding document, the initiative seeks to bridge historical divides between the "two most influential brain health organizations" and promote a unified international vision for brain health.

Throughout the meeting, speakers stressed that neurological and psychiatric disorders share biological, social, and environmental determinants, and therefore require coordinated responses. Neurologists, psychiatrists, rehabilitation specialists, primary care physicians, and public health experts were encouraged to work within a shared model focused not only on disease treatment, but also on prevention, resilience, and lifelong well-being.

This perspective strongly resonates with the WFN's longstanding mission to improve neurological care, education, and public awareness through international engagement and advocacy.

Brain Health as a Global Imperative

A central message from the IABH discussions was that brain health extends far beyond the absence of disease. Protecting the brain means preserving cognition, emotional well-being, autonomy, productivity, and quality of life throughout the lifespan.

Participants emphasized that neurological and psychiatric disorders now constitute one of the leading causes of disability worldwide, generating immense personal, societal, and economic burdens. In this context, brain health is increasingly understood not only as a medical issue, but also as a strategic societal priority.

Several sessions focused on modifiable risk factors, including hypertension, diabetes, obesity, physical inactivity, sleep disorders, social isolation, and limited educational opportunities. Sessions also covered dementia risk reduction and the growing evidence supporting early, personalized, and multidomain interventions aimed at delaying cognitive decline.

One of the meeting's recurring themes was the recognition that "heart health is brain health." Speakers highlighted the profound interconnection between vascular health and cognitive outcomes, calling for stronger links between cardiovascular medicine and brain health communities. This integrated perspective reflects a growing recognition that effective prevention strategies must consider brain health within the broader context of systemic health.

Regional Perspectives and Reciprocal Learning

One of the defining characteristics of the meeting was its emphasis on models of **reverse innovation** — understood not as one-way transfer, but as a form of **reciprocal learning** between high-income countries and low- and middle-income regions.



Top brain health experts discussed technology, equity, brain health indicators, governance, and more during an IABH roundtable.

Innovation in brain health does not flow exclusively from resource-rich settings, according to participants. Discussions emphasized a broader model of bidirectional exchange and reciprocal learning between health care systems across different regions and economic contexts. Many effective community-based interventions, prevention strategies, and models of care emerge precisely from settings where resources are limited and creativity becomes essential.

The program showcased initiatives from Africa, Asia, Europe, Latin America, and North America, highlighting national and regional strategies aimed at advancing policy, prevention, and care across diverse health care systems.

Within this international landscape, the WFN's longstanding relationships with regional neurological societies position the federation as a natural platform for international exchange. Discussions repeatedly emphasized the importance of adapting strategies to local cultural, economic, and health care realities while maintaining shared objectives.

Artificial Intelligence, Sleep, and the Future of Brain Health

The scientific program also explored emerging technologies and future directions in research and care. Sessions examined the growing role of artificial intelligence (AI), multimodal data integration, digital biomarkers, and precision medicine approaches capable of improving risk prediction and enabling earlier interventions.

Another major topic was sleep health, increasingly recognized as a fundamental pillar of brain health alongside nutrition and physical activity. Speakers reviewed mounting evidence linking sleep and circadian regulation to neurological, psychiatric, cardiovascular, and neurodegenerative outcomes, reinforcing the idea that brain health must be approached through multidimensional and preventive perspectives.

The meeting concluded with the presentation of 10 implementation strategies designed to translate international commitments into concrete action. These recommendations included:

- Strengthening advocacy initiatives
- Embedding brain health into legal and economic frameworks
- Expanding workforce education
- Improving public communication



Prof. Claudio L.A. Bassetti discusses the Swiss Brain Health Plan at the IABH meeting.



Dr. Edgardo Reich (left) and Dr. Steven Lewis.



From left to right: Dr. Teresa Torralva; Prof. Claudio L.A. Bassetti; Jorge Macri, chief of government of the autonomous city of Buenos Aires; and Prof. Facundo Manes.

- Accelerating the integration of research findings into routine clinical care

Looking Ahead

The meeting marked an important milestone in the consolidation of the IABH and highlighted the growing momentum surrounding brain health policy and advocacy.

For the WFN, the event reflected an evolving role that extends beyond representing neurologists worldwide. Increasingly, the federation is emerging as an international advocate for connected brain health strategies linking disciplines, regions, and health care systems.

By supporting initiatives such as the IABH, the WFN continues to foster international cooperation while advancing its broader mission of improving neurological care, education, and brain health worldwide.

The conversations initiated in Buenos Aires are expected to continue through future alliance meetings and collaborative projects involving stakeholders across the neurological and mental health communities. The next IABH meeting will take place Nov. 25-26, 2026, in Rome, followed by a 2027 meeting in Singapore, further expanding the alliance's international reach and implementation agenda.

Building on the Bern Declaration on



From left to right: Prof. Claudio L.A. Bassetti, Prof. Matilde Leonardi, and Prof. Facundo Manes.

Brain Health developed during the 2025 founding meeting in Bern, the alliance is also advancing collaborative publications and strategic initiatives aimed at strengthening integrated global brain health policies and partnerships. Together, these efforts reinforce the idea that brain health, perhaps more than any other field in medicine, demands collective thinking beyond borders. •

Claudio L.A. Bassetti is dean of medical faculty at the University of Bern and director of teaching and research at Insel Gruppe AG hospital in Bern, Switzerland. **Steven Lewis** is president of the World Federation of Neurology. **Ester Piovesana** is a neuroscientist, scientific assistant at the Swiss Brain Health Foundation, and a freelance medical writer. **Riadh Gouider** is first vice president of the World Federation of Neurology.



WORLD FEDERATION
OF NEUROLOGY

Editors-in-Chief

Steven L. Lewis (Editor)
Walter Struhal (Co-editor)
WFN London Office
Bedford House @ Fulham Green
69-79 Fulham High Street
London SW6 3JW
United Kingdom
Tel.: +44 (0)20 3542 1657/1658
e-mail: info@wfneurology.org

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Editorial Correspondence: Send editorial correspondence to *World Neurology*, Dr. Lewis at steven.lewis@wfneurology.org or Dr. Struhal at walter.struhal@wfneurology.org.

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PRESIDENT'S COLUMN

Springing Into Action Around the World

The WFN presents at the World Health Assembly, introduces new co-opted trustees, and welcomes World Brain Day 2026.

BY STEVEN L. LEWIS, MD

The World Federation of Neurology (WFN) is a federation of 126 neurological societies advocating for neurologists and neurological care globally. Our long-stated mission is “to foster quality neurology and brain health worldwide, a goal we seek to achieve by promoting global neurological education and training, with the emphasis placed firmly on underresourced parts of the world.”

On behalf of the WFN, I would like to welcome all neurologists and individuals interested in neurology and brain health to the June 2026 issue of *World Neurology*, the official WFN newsletter.

The WFN at the WHA

As an official nonstate actor (NSA) of the World Health Organization (WHO), the WFN has the privilege and responsibility of helping represent the field of neurology, our patients, and brain health at the proceedings of the WHO.¹

As president of the WFN, I presented several statements at the **79th World Health Assembly (WHA)**, which took place May 18-23, 2026, at the WHO headquarters in Geneva, Switzerland.

As background, the WHA is attended by representatives of the health ministries from member states as well as NSAs such as the WFN. The WHA meeting agenda includes individual topic items



A meeting room at WHO headquarters in Geneva, Switzerland, where the WHA agenda items were discussed and where the WFN presented its statements.

for which specific times (typically several hours) are allocated. These agenda items are addressed first by the member state representatives. They are allowed up to two minutes per oral statement. Following these statements, the NSAs have an opportunity to provide oral statements (maximum one minute). These NSA (e.g. WFN) statements must be prepared, submitted, and accepted for presentation by the WHA before being placed on the agenda for presentation.

We are pleased to report that the WFN was approved to present four statements at the WHA in May, each related to a neurological/brain health aspect of the relevant WHA agenda item.

Our first statement pertained to the “Roadmap for Neglected Tropical Diseases 2021-2030” (**WHO agenda item 12.3**). In this statement, I stressed

the importance of this WHO initiative, noting that neglected tropical diseases are “major drivers of neurologic morbidity and mortality, especially in low-income regions.” I also noted that “these diseases can severely affect brain health and mental health while carrying considerable stigma that isolates patients and delays care.”

The WFN also presented a second oral statement related to the prevention and control of noncommunicable diseases (NCDs) and the promotion of mental health (**WHO agenda item 12.1**). In this statement, I noted that recognition of the interconnectedness between NCDs, neurological conditions, and mental health is “crucial for developing strong health care systems prepared for prevention and treatment of these conditions.” I also noted that neurological disorders are the leading cause of overall global disease burden and disability and called for the “implementation of the Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders (IGAP) alongside measures against NCDs to protect brain health at all stages of life.”

The WFN also presented a third oral statement that dealt with universal health coverage and rare diseases (**WHO agenda item 12.4**). In this statement supporting the inclusion of rare diseases in universal health coverage, I had the opportunity to state that “rare neurological conditions have a very significant prevalence and create high economic burden.” I further explained that incorporating neurological rare diseases in universal health coverage frameworks will allow for earlier intervention, longer active lifespans for patients, preservation of dignity, and reduction of family and societal burdens. I also urged “member states to strive toward equitable access to genetic testing, novel therapies, and multidisciplinary management and rehabilitation for patients with rare diseases.” Finally, I noted that “as a society of neurology professionals, we believe ‘access for all’ is

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The Palais des Nations in Geneva, Switzerland, a pivotal meeting place for the member states of the World Health Assembly.



WHO headquarters in Geneva, Switzerland.



Prof. Steven Lewis, WFN president, presenting the first of four oral statements on behalf of the WFN at the World Health Assembly.

PRESIDENT'S COLUMN

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a prerequisite of humane and sustainable health care systems.”

For logistical reasons, a fourth statement from the WFN was presented by Dr. Gagandeep Singh. Dr. Singh spoke about primary health care and the international recruitment of health personnel (**WHO agenda item 12.5**), and the statement noted that “primary health care is crucial for timely diagnosis of potentially disabling conditions and indispensable for implementing prevention measures” and that the WFN urges “the implementation of the WHO IGAP to primary health care frameworks to address the high prevalence of neurological conditions and comorbidities.”

This WFN statement also noted that “the WFN is committed to supporting member states in raising workforce capacity, with an emphasis on underresourced parts of the world.” I want to sincerely thank Dr. Singh for providing this oral statement on behalf of the WFN.

I remain deeply thankful to Dr. Ksenia Pochigaeva, the co-chair of the WFN International Affairs/WHO Committee, and Prof. Alla Guekht, past WFN trustee and the current president of the International League Against Epilepsy (ILAE), for their continuing mentorship, support, and 24/7 availability to help maneuver the necessary complex rules of the WHA. I’d also like to highlight Dr. Pochigaeva’s expert assistance in crafting our many statements as we diligently work together to help represent neurology in these important venues.

Presentation With OneNeurology During the WHA Week

In addition to the proceedings of the assembly, the week at the WHA in Geneva included official side events. The WFN was privileged to be invited to an event organized by OneNeurology along with its NSA partners MS International Federation, the International Bureau for Epilepsy, and Alzheimer’s Disease International, with support of the Italian Ministry of Health. In this event, titled “Delivering on Brain Health: Implementing IGAP and the Political Declaration on NCDs: OneNeurology Perspective,” I was privileged to present a talk titled “Global Status Report: Progress and Gaps.”

Meeting With WHO Brain Health Leadership

During the WHA week in Geneva, we also met with Dr. Tarun Dua and Dr. Neerja Chowdhari from the Brain Health Unit, Department of NCDs and Mental Health at WHO headquarters. Our meeting included WFN First Vice President Prof. Riadh Gouider and Prof. Guekht.

We discussed mutual WFN/WHO

initiatives, including the upcoming subregional workshop in Addis Ababa, Ethiopia. This workshop will be aimed at strengthening understanding, implementation, and knowledge-sharing in East Africa on the IGAP. It will include government representatives, policymakers, health professionals, civil society, researchers, and people with lived experience from five Sub-Saharan African countries (Ethiopia, Kenya, South Sudan, Tanzania, and Uganda).

New Co-Opted Trustees

The WFN trustees are pleased to announce the appointment of two co-opted trustees who joined the board over the last few months: Prof. Njideka Ulunma Okubadejo and Dr. Paola Guraieb Chahin.

Prof. Okubadejo is a medical researcher and the first female neurologist and tenured professor of neurology in Nigeria. After earning her medical degree from Obafemi Awolowo University (1983-1989), she completed residency training through the National Postgraduate Medical College of Nigeria, followed by clinical fellowships at Howard University and the Mayo Clinic. She currently serves as a professor of neurology at the University of Lagos (UNILAG) and an honorary consultant neurologist at the Lagos University Teaching Hospital (LUTH).

Internationally recognized for her work on neurodegenerative diseases, her research focuses primarily on the genetics and epidemiology of Parkinson’s disease in African populations. She is chair of the International Parkinson and Movement Disorders Society (MDS) Africa Section Steering Committee and campaigns extensively for public neurological health across West Africa. Before her appointment as a WFN co-opted trustee, she helped build a longstanding partnership between the African Academy of Neurology (AFAN) and the WFN, actively contributing to WFN-supported programs and educational initiatives to bridge the neurological care gap in Sub-Saharan Africa.

Dr. Guraieb Chahin is a neurologist from Mexico whose clinical experience focuses on neurodegenerative disorders, epilepsy, sleep conditions, clinical neurophysiology, and neuro-oncology. She graduated as a medical doctor from the Universidad Anáhuac and did postgraduate training at the Universidad Nacional Autónoma de México (UNAM) in internal medicine, neurology, and clinical neurophysiology. She primarily serves patients at the ABC Medical Center’s Observatorio campus in Mexico City. She has expanded her medical expertise internationally through fellowships, including at the Hospital de la Pitié-Salpêtrière in Paris, France.

An active researcher, her core expertise covers cognitive neurology, dementia prevention, Alzheimer’s disease, and the correlation between chronic sleep deprivation and cognitive

Prof. Alla Guekht, president of the International League Against Epilepsy (and past WFN trustee), presenting an oral statement on behalf of the ILAE at the World Health Assembly in Geneva.



decline. Prior to being named a co-opted trustee for the WFN, Dr. Chahin was already established as a prominent voice in Latin American neurology, actively contributing to the WFN’s advocacy and educational programs and other global initiatives within the Pan-American Federation of Neurological Societies (PAFNS) and the Mexican Academy of Neurology (Academia Mexicana de Neurologia).

Please join me in welcoming these two remarkable neurologists to the WFN Board. Their experiences, expertise, and thoughtful opinions and insights have already impacted our ongoing work at the WFN.

World Brain Day 2026

We’re only days away from World Brain Day 2026, which will take place July 22. The theme calls for “Brain Health: Access for All.” On behalf of the WFN and our member neurologic societies, and with appreciation of support from the six regional neurology associations (AFAN, AOAN, AAN, EAN, PAFNS, and PAUNS), we welcome participation in this important event from around the globe. For more information, please go to the [World Brain Day page](#) on the WFN website, which includes links to the World Brain Day toolkit and the World Brain Day webinar.

We look forward to many illustrated articles on World Brain Day 2026 events and celebrations from around the world for the next issue of *World Neurology*.

Upcoming Events

Finally, this column was written from Cape Town, South Africa, during our



From left to right: Steven Lewis, Tarun Dua, Alla Guekht, Riadh Gouider, and Neerja Chowdhari at WHO headquarters.

team’s site visit for the **2027 World Congress of Neurology**. The city, venue, and attractions are beautiful and exciting, and the developing Congress Scientific and Teaching Course Program is proceeding nicely. Please mark your calendars for this event, which will take place Oct. 23-25, 2027.

Also don’t forget to register for the **World Federation of Neurology Digital Update Course**, happening Oct. 28-29, 2026. This year, 13 world-class speakers will provide state-of-the-art updates on major fields of neurology. We look forward to seeing you at these events! •

References:

- Guekht A, Pochigaeva K, Freedman M, et al. The World Federation of Neurology and its global engagement with the World Health Organization and the United Nations economic and social council. *J Neurol Sci.* 2026;480:125708. PMID: 41455678.



WFN trustees (top row, from left to right): Steven Lewis, WFN president; Riadh Gouider, WFN first vice president; Marianne de Visser, (acting) secretary general; Morris Freedman, treasurer. WFN elected trustees (bottom row, from left to right): Chandrashekhar Meshram, Mohammad Wasay, Tissa Wijeratne. WFN co-opted trustees: Njideka Ulunma Okubadejo, Paola Guraieb Chahin.



WORLD BRAIN DAY

Brain Health: Access For All

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Assessing Trainees' Satisfaction With Clinical Research Teaching in Neuroepidemiology

Study designed to evaluate neuroepidemiology courses reveals general satisfaction in content, high willingness to recommend courses.

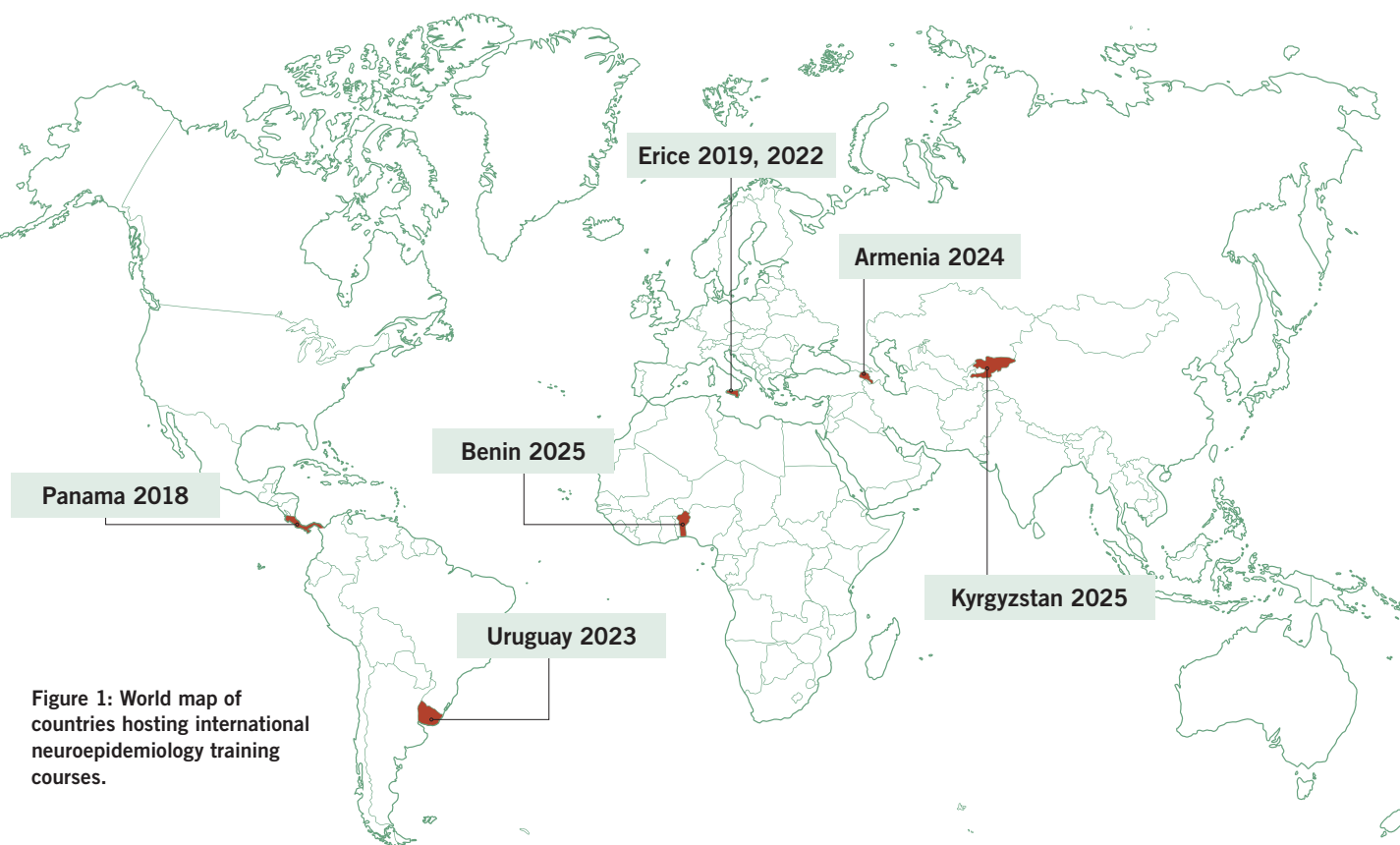


Figure 1: World map of countries hosting international neuroepidemiology training courses.

BY MARTIN KOUAME TCHANKONI, CAMILLE VOISIN-MERVEILLE, CARLOS KETZOIAN, WALTER A. ROCCA, GIANCARLO LOGROSCINO, MARCO D'AMELIO, PAOLO RAGONESE, GIOVANNI SAVETTIERI, FERNANDO GRACIA, MARIO O. MELCON, THIBAUT GELLÉ, ANDREA ERAZO, BARNABÉ BOTON, KENESH DZHUSUPOV, ARTASHES TADEVOSYAN, DIEU DONNÉ GNONLONFON, PIERRE-MARIE PREUX

In recent years, health care professionals, particularly young neurologists, have increasingly turned to careers in clinical research. As a result, there is a growing need to update and broaden their knowledge of research methodology and epidemiology. Strengthening these skills is essential to ensuring good quality research, and to improving public health decision-making and patient care.

To meet this need, specialized courses in research methodology have been organized over the past four decades, offering a structured and comprehensive training program for health care professionals. These courses are designed to accommodate a wide range of profiles, including epidemiologists, biostatisticians, demographers, bioinformaticians, computer scientists, and artificial intelligence specialists. The main aim of these programs is to strengthen the research capabilities of some participants, while offering others the opportunity to acquire fundamental skills in research methodology.

Organized by B.S. Schoenberg,¹ the

first course was held in San Miniato, Italy (province of Pisa), in 1981. It was titled "Advanced Course in Neuroepidemiology: Principles and Clinical Applications." It was the first major international course devoted to neuroepidemiology. Others took place more recently in Europe and Latin America, fostering an international learning environment that encourages interdisciplinary collaboration.²

Despite the long history of these training programs, an assessment of participant satisfaction is essential to ensure their relevance and effectiveness. Understanding participants' experiences and perceptions provides valuable information on strengths and areas for improvement in the format, content, and overall impact of the course.

The aim of this study was to describe the satisfaction levels of participants who have attended one of seven recent courses. This study will enable us to assess the effectiveness of the course and its ability to meet the educational needs of participants, and to identify potential improvements for future sessions.

Study Design and Setting

This was a cross-sectional study, based on the results of an online questionnaire completed by course participants from July 2 to Dec. 31, 2025. The course leaders of seven recent international courses of neuroepidemiology were contacted,

and they shared the link to the online questionnaire with the participants by e-mail. (See Figure 1.)

Data Collection and Population

Participants were informed that participation in the study was voluntary, and they were provided with contact information if they wanted to clarify doubts or ask questions. All data were coded to ensure anonymity. The questionnaire was organized into five parts. They were:

- Sociodemographic and professional information
- Information on the course content
- Information on the course enrollment
- Course evaluation (participants' satisfaction)
- Intention to recommend the course

Participants' satisfaction with different parts of the course was assessed via direct questions with a four-point Likert scale, ranging from 1 (very unsatisfied) to 4 (very satisfied). The course content has been described elsewhere.²

Statistical Analysis

Data were collected online using a KoboToolbox questionnaire, which was provided directly via a Microsoft Excel output database. All analyses were performed using the R statistical package (version 4.5.3, Vienna, Austria).

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STUDY ABSTRACT

PROBLEM CONSIDERED

There is a growing need to update and broaden research methodology and epidemiology knowledge among health care professionals, particularly young neurologists. The aim of this study was to describe the satisfaction levels of participants who have attended recent courses in research methodology applied to neurology (neuroepidemiology).

METHODS

This was a cross-sectional study, based on the results of an online questionnaire completed by course participants of one of seven international courses of neuroepidemiology. The course leaders were contacted, and they shared the link to the KoboToolbox online questionnaire with the participants by e-mail.

RESULTS

A total of 64 participants completed the questionnaire (median age 35 years [30-43]; 57.8% women), with 23.4% attending for the first time. The primary motivation was to improve knowledge (68.8%), and ≥80% reported enhanced knowledge and research skills in neuroepidemiology. Overall satisfaction exceeded 50% across course components, and 98.4% of participants would recommend the courses to colleagues.

CONCLUSION

Participants reported significant improvements in clinical research and epidemiology skills, supporting the continuation and adaptation of these courses to meet the evolving needs of public health professionals.



RESEARCH

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Quantitative variables were presented as median with their interquartile range, and qualitative variables were presented as frequency and proportions.

Results

A total of 64 participants completed the questionnaire. The median age of participants was 35 years (30-43), with extremes ranging from 22 to 63 years. Gender distribution was slightly in favor of women (57.8%). About one in four participants (23.4%) had attended their first course at the 2025 edition in Benin.

The main reason respondents enrolled in these courses was to improve knowledge (68.8%), and at least 80% reported improved knowledge and research skills in neuroepidemiology. (See Table 1.)

Participants described themselves as generally satisfied with the various parts of the course (satisfaction above 50%). (See Figure 2.) Of the 64 respondents for the courses, 98.4% would recommend these courses to their colleagues: 31.2% would recommend, and 67.2% would strongly recommend. (See Figure 3.)

Discussion

The study found a high level of satisfaction among participants who attended the training courses. The median age of 35 years suggests that most attendees were early- to mid-career professionals, which aligns with the expected target audience for these specialized courses.

Numerous studies have highlighted the central role of knowledge acquisition in stimulating curiosity. Curiosity encourages deeper engagement in the learning process. In our study, the primary motivation for enrollment was knowledge improvement (68.8%), reinforcing the idea that these courses effectively address an educational gap among professionals in the field.

As demonstrated in the literature, the acquisition of knowledge generates feelings of curiosity, helping people to identify gaps in their understanding and reinforcing their motivation to learn.³ These findings underscore the importance of designing educational experiences that are not limited to providing information.

Furthermore, at least 70% of respondents reported benefiting from the courses in a variety of ways, demonstrating the relevance and impact of the program. Indeed, more than nine out of 10 respondents were able to put into practice the knowledge acquired during this program, particularly in their ability to analyze epidemiological studies related to neuroepidemiology, after taking these courses.

Relevance and Effectiveness of the Teaching Format

Active learning is defined as all approaches that focus more on developing students’ skills than on transmitting information.⁴ Active learning strategies have been

Table 1. General characteristics of course respondents (N = 64).

	Frequency	Proportion (%)
Age (years)		
Min-Max	22-63	
Median (Q1-Q3)	35 (30-43)	
Sex		
Female	37	57.8
Male	27	42.2
First course attended		
2018, Panama	7	10.9
2019, Erice	9	14.1
2022, Erice	11	17.2
2023, Uruguay	7	10.9
2024, Armenia	6	9.4
2025, Benin	15	23.4
2025, Kyrgyzstan	9	14.1
Are you a medical doctor?	49	76.6
Course enrollment		
What is the main reason you enrolled in these courses?		
To improve knowledge	44	68.8
To gain new pedagogical approaches in the field	11	17.2
To seek new project ideas	7	10.9
Which part(s) of the courses were the most interesting for you?		
Practical part	51	79.7
Discussions of scientific articles	45	70.3
Workshop discussions	38	59.4
Theoretical part	38	59.4
Conferences	33	51.6
Course application		
Have you had the opportunity to apply the knowledge gained from these courses to current or future research projects?	42	65.6
Have you noticed any changes in your ability to design epidemiological studies related to neuroepidemiology after taking these courses?	54	84.4
Have you noticed any changes in your ability to implement epidemiological studies related to neuroepidemiology after taking these courses?	54	84.4
Have you noticed any changes in your ability to analyze epidemiological studies related to neuroepidemiology after taking these courses?	60	93.8
Have you noticed improvements in your knowledge following these courses?	60	93.8

shown to facilitate interaction between learners and teachers, thereby encouraging discussion, critical thinking, and advanced clinical reasoning skills.⁵ Also, the use of active learning classrooms has the ability to improve student engagement, interaction, and active learning.⁶

Participant Satisfaction and Engagement

Participants’ level of satisfaction with the various course components was positive. The “course overall” component received the highest proportion of “very satisfied” responses (67.2%), reinforcing the effectiveness of the program’s structure and content. Similarly, the “conferences” received strong approval (59.4% “very satisfied”). This is in line with studies highlighting the value of expert-led sessions for learning something new and developing one’s network.^{7,8}

Conferences usually bring together a complex network of academic and nonacademic professionals to discuss and disseminate new knowledge. The practice of “conferencing” also includes activities that go far beyond the exchange of information.⁸

In addition, the high proportion of satisfaction and recommendation intention (31.2% would recommend and 67.2% would strongly recommend) suggest that the courses successfully met participants’ expectations. Such

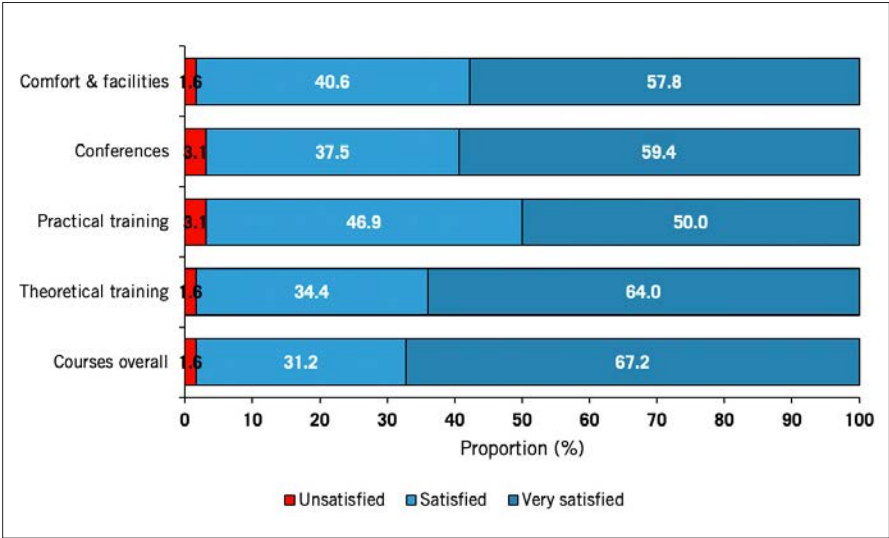


Figure 2. Course evaluation by participants.

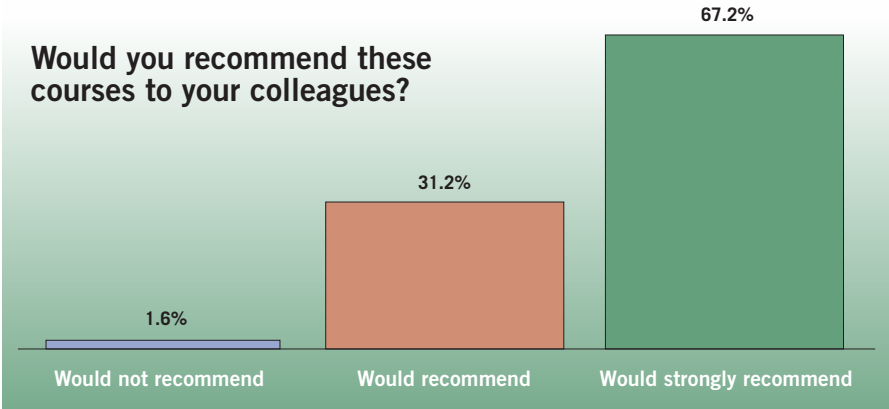


Figure 3: Course recommendation by participants.

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endorsement underscores the perceived value and effectiveness of the training.

Potential Improvements and Future Perspectives

Our results are consistent with previous studies on the satisfaction of participants who have benefited from reinforcement courses. The study highlights the importance of the interactive format of the courses and of their varied content (lectures, practical training, etc.). This training initiative needs to be maintained and continued in view of the high level of satisfaction observed.

Future improvements should focus on integrating digital tools or case studies to enhance the practical aspect. The training offer could consider modules tailored to the specific profiles of students, such as biostatisticians, doctors, and junior/senior researchers. Another point of improvement would be to promote networking and mentoring opportunities to ensure continuous accessibility for various professionals. Strengthening post-training follow-up, as well as refresher sessions or remote collaboration projects, could be alternatives.

An important aspect to consider is the deliberate choice by the organizers to maintain these courses in a face-to-face format. This setting fosters sustained immersion and encourages rich, informal interactions between faculty and participants that are difficult to replicate remotely. Close contact over several days not only supports in-depth scientific discussions but also promotes

the development of collaborations, mentorship, and durable professional networks.

At present, we do not have data to assess how these courses would perform if delivered entirely online. Although such a format would offer clear advantages in terms of accessibility, cost, and flexibility, it might also weaken the quality of human interactions, participant engagement, and the collective dynamics that are central to the value of these courses.

Conclusion

The results of this study indicate that the neuroepidemiology training courses are perceived as highly relevant and beneficial, particularly due to their interactive and applied approach. Participants reported significant improvements in clinical research and epidemiology skills, supporting the continuation and adaptation of these courses to meet the evolving needs of public health professionals. Further enhancements, such as integrating innovative teaching tools and strengthening post-training follow-up, could optimize the long-term impact on participants' careers and the field of neuroepidemiology research. •

Martin Kouame Tchankoni is a researcher affiliated with the African Center for Epidemiology and Public Health Research in Togo, Africa. **Camille Voisin-Merveille** is a researcher affiliated with the Institute of Epidemiology and Global Health and Omega Health in Limoges, France. **Carlos Ketzoian** is a researcher in the Institute of Neurology at the Hospital de Clínicas at the University of the Republic in Montevideo, Uruguay. **Walter A. Rocca** is a professor of epidemiology and neurology in the department of quantitative health sciences at the Mayo Clinic

in Rochester, New York. **Giancarlo Logroscino** is a researcher in the department of neuroscience at the University of Bari in Bari, Italy. **Maro D'Amelio** is a senior researcher in the department of biomedicine, neurosciences, and advanced diagnostics at the University of Palermo in Palermo, Italy. **Paulo Ragonese** is an associate professor in the department of biomedicine, neurosciences, and advanced diagnostics at the University of Palermo in Palermo, Italy. **Giovanni Savettieri** is a professor of neurology in the department of biomedicine, neurosciences, and advanced diagnostics at the University of Palermo in Palermo, Italy. **Fernando Gracia** is a neurologist at the Hospital Santo Tomás in Panama City, Panama. **Mario O. Melcon** is president of the Fundación para la Investigación en Neuro Epidemiología (FINEP) in Junín, Buenos Aires, Argentina. **Thibaut Gellé, Andrea Erazo, and Barnabé Botton** are researchers affiliated with the University of Limoges, in Limoges, France, and the Laboratory of Epidemiology of Chronic and Neurological Disease at the University of Abomey-Calavi in Cotonou, Benin. **Kenesh Dzhupov** is head of the public health department in the International Higher School of Medicine at the International University of Kyrgyzstan in Bishkek, Kyrgyzstan. **Artashes Tadevosyan** is a professor in the department of public health at Yerevan State Medical University in Yerevan, Armenia. **Dieu donné Gnonlonfon** is a researcher affiliated with the Institute of Epidemiology and Global Health and Omega Health in Limoges, France, and the Laboratory of Epidemiology of Chronic and Neurological Disease at the University of Abomey-Calavi in Cotonou, Benin. **Pierre-Marie Preux** is a researcher affiliated with the Institute of Epidemiology and Global Health and Omega Health in Limoges, France.

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HISTORY

The Framing of Diseases Throughout History

The way we view certain syndromes has changed depending on the medical knowledge, moral values, and social norms of the era surrounding them.

BY PETER J. KOEHLER

When considering diseases from a cultural-historical context, one must examine two aspects: the relationship between “views on health and illness, perceptions of risks posed by health threats, and therapeutic and preventive traditions” and, on the other hand, “cultural characteristics of a society or population groups.”¹

This includes the emergence of disease patterns in relation to “sociocultural changes, the existence of taboos and shame surrounding certain diseases and the breaking down of these, differences in treatment for the same ailment across different countries, and forms of preventive medicine that were supported in the compartmentalized, paternalistic society, but which are no longer successful in an individualized culture.” It also includes “the difference between Anglo-Saxon surgical culture and German-speaking surgical culture.”²

Just as in the philosophy of science — think of Kuhn’s “The Structure of Scientific Revolutions” (1962) and Ludwig Fleck’s “Entstehung und Entwicklung einer wissenschaftlichen Tatsache” (1935) — there has been considerable interest in this sociocultural context since the end of the 20th century. This interest is in part due to the work of the American medical historian Charles E. Rosenberg (b. 1936) who identified this historical process as “framing disease.”³

In the introduction to “Framing Disease: Studies in Cultural History,” which is essentially a collection of essays, Rosenberg noted that, in certain respects, illness only exists when people agree that it exists — by observing it, naming it, and responding to it. (See Figure 1.) According to Rosenberg, illness is not only a biological event, but also a social phenomenon. In addition to patients, doctors, families, and social institutions, the government, employers, and insurance companies find ways to frame the biological event in terms that make sense to them and serve their own goals.

Many diseases discussed in the book, such as end-stage kidney disease, rheumatic fever, parasitic infectious diseases, and epilepsy, have been defined,

redefined, and renamed over the course of several centuries. Interestingly, as the essays in the book demonstrate, the concept of disease is also used to frame culturally resonant behaviors, with examples including anorexia nervosa, suicide, and chronic fatigue syndrome.

According to Rosenberg, illness is shaped by government policy, as case studies on disability and forensic psychiatry demonstrate. Moreover, medical institutions, as managers of people with illnesses, have vested interests in diagnoses, as the history of institutions for the treatment of tuberculosis or epilepsy shows. Finally, the existence and conquest of diseases serve to frame a society’s perception of its own “health” and to guide social reforms.

Framing “Hysteria” and Neurasthenia

I will examine two afflictions that had an interesting history in this two-part series: “hysteria” and neurasthenia. Both conditions have been treated by neuropsychiatrists in the past. Originally, they were considered organic disorders, but before they were removed from the nosology, it was assumed that they had a functional cause.

In this article, we will examine “hysteria,” a condition that was already known in classical antiquity, albeit under a different name. Throughout history, it has been framed in different ways and in different contexts, eventually loosening its medical meaning and disappearing over the course of the 20th century. The term itself, however, remained reserved for behavior that exhibits overwhelming or uncontrollable fear or emotional outbursts. In other words, it took on a nonmedical meaning as for instance in “mass hysteria” or “political hysteria.”

In the second part of this article, we will discuss neurasthenia. At first glance, it appeared to have had a relatively short history (1870-1930). But if we examine the various symptoms, one could argue that its history is much longer and that only the terminology has changed over time.

Both “hysteria” and neurasthenia can be cited as examples of the fact that diseases are not immutable natural phenomena, but socially and culturally constructed concepts. They reflect contemporary medical knowledge, moral values, and social norms. Diagnoses may eventually become obsolete due to new insights, or they may no longer align

with certain societal views regarding health and illness.

“Hysteria” in Classical Antiquity

It has been suggested that in Ancient Egypt certain behavioral disorders in women were viewed as resulting from abnormal movements of the uterus — as an organ that floats independently. This has been disputed by others.² In any case, we encounter it in the “Corpus Hippocraticum,” where it is still referred to as “suffocation of the womb.” It is also found in Plato’s work (c. 427-347 BCE), in particular his “Timaeus.” The idea was that if the womb remains barren for a long time, it becomes irritated and wanders throughout the body. It would block the patient’s airways, and because it prevents her from breathing, it puts her in extreme distress and causes all manner of other illnesses. It was therefore viewed as a condition resulting from a lack of sexual relationships.

Reported symptoms included dizziness, paralysis, sensory disturbances, difficulty breathing, globus sensation, and extreme emotional behavior. At the time, “hystero-epilepsy” was not considered part of the diagnosis. Treatment included disinfection, abdominal bandages, and immediate marriage. As anatomical knowledge of the ligaments surrounding the womb increased, the idea of a “wandering uterus” eventually became untenable. Nevertheless, there were still authors in the second century (CE) who adhered to the concept of the moving womb.³

Galen of Pergamon (129-199 CE) listed the following symptoms: immobility, a pulse that was difficult to feel, and paroxysms accompanied by contractures of the limbs. He believed the cause lay in tensions within the membranes, associated with the retention of menstrual blood and “female seed.” This was said to cause noxious vapors that rise within the body. As a treatment, he mentioned, among other things, aromatic substances and the induction of an orgasm by a midwife.

From the fourth to the seventh century, disagreement persisted regarding the cause — whether the uterus was moving or not — but the symptoms remained more or less consistent: loss of speech and sensation, limbs drawn together, an irregular pulse, and cessation of breathing. The treatment involved presenting a foul odor to the nose and a sweet odor to the vulva, so that the uterus would return to its proper place. In Arabic medicine, the concept of the mobile uterus made a full comeback.⁴

Medieval Period: The First Paradigm Shift

During the Middle Ages, there was a paradigm shift from naturalistic

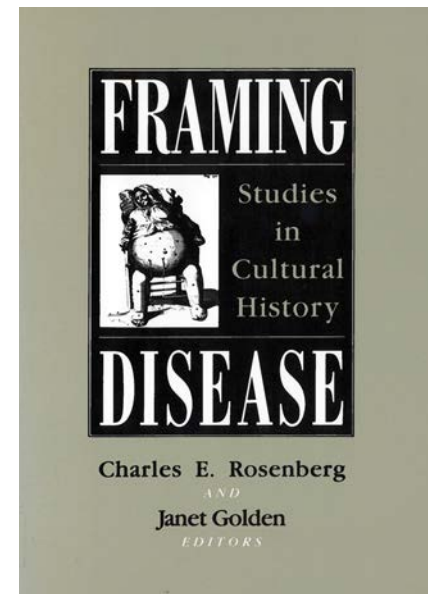


Figure 1. Cover of “Framing Disease: Studies in Cultural History,” by Charles E. Rosenberg and Janet Golden.

interpretations to supernatural conceptions.⁴ Although the exact cause of this is unknown, various suggestions have been put forth, including the collapse of the (Western) Roman Empire, the spread of Christianity, and the complex interplay between religious doctrines, limited medical knowledge, and societal views on suffering.

Church Father Augustine of Hippo (353-430) viewed suffering as a manifestation of innate evil resulting from original sin. From the fifth to the 13th century, all sorts of dramatic manifestations occurred that were seen as signs of demonic possession. Patients were believed to be victims of witchcraft or soul mates of the devil. Anesthesia, mutism, and convulsions were regarded as so-called *stigmata diaboli*.

When it comes to healing practices of that time, we should think of supernatural invocations, prayers, incantations, amulets, and exorcism. There was also widespread persecution, particularly toward the end of the Middle Ages. In the late Middle Ages and the Renaissance, the diagnostic process shifted from the hospital to the church and the courtroom. Spectacular interrogations took place, often accompanied by misogynistic directives regarding the investigation, torture, and sometimes execution of witches. In modern times, this is often viewed as a way they explained and controlled deviant behavior, particularly among women.⁴

The Second Paradigm Shift: Localization in the Brain

Reactions from the medical community emerged at the height of the witch hunts in the late Renaissance. These led to the reconceptualization of “hysteria” on scientific and humanitarian grounds. Among the physicians who played a

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role in this were Paracelsus (1493-1541), Joannes Wier (c. 1515-1588; see Figure 2), Ambroise Paré (1510-1590; see Figure 3), and Edward Jorden (1569-1633). This led to the cause of “hysteria” shifting from the realm of religion and magic to that of medical pathology and natural causes.

In the 17th century, the term “hysteria” replaced that of suffocation of the womb. Furthermore, the French physician Charles Lepois (1563-1633, also known as Carolus Piso) noted the uterus appeared normal upon pathological-anatomical examination, and he argued that “passions” were the cause. (Today, we would use the term “emotions.”) The Italian Giorgio Baglivi (1668-1707) realized that the words and actions of physicians played an important role in the treatment of hysterical patients.

Thomas Sydenham (1624-1689; see Figure 4) should be regarded as a physician who introduced important insights into the clinical picture of the condition, some of which were not confirmed until much later. In fact, he employed a neuropsychological model. Regarding the cause, he viewed the condition as an imbalance in the distribution of the *spirites animales* between body and mind. Passions such as anger, fear, love, and sadness played a significant role in the onset of symptoms.

Sydenham was aware of the clinical fluidity and mimetic capacity with respect to the symptomatology, which made reaching the correct diagnosis quite a challenge for the physician. Furthermore, he observed that, in addition to women, “hysteria-like” symptoms could also be observed in men, in which case, he referred to it as hypochondria.⁴

At the end of the 18th and the beginning of the 19th century, various concepts coexisted attributing the cause to the uterus, the brain, and the ovaries (the discovery of ovulation took place in the 1840s). It is interesting to note that, regarding female sexuality, there was no revival of the teachings from the “Corpus Hippocraticum,” but rather a shift from sexual deprivation to sexual overindulgence. In the meantime, “hysteria” found its place in the various nosological systems of François Boissier de Sauvages (1706-1767),⁵ William Cullen (1710-1790),⁶ and Philippe Pinel (1745-1826).⁷

Charcot and the Salpêtrière

In the middle of the 19th century, several physicians, including Wilhelm Griesinger (1794-1870), and Paul J. Möbius (1853-1907), came up with the concept of the hysterical temperament and constitution. This led to the description of several rather negative character traits, including eccentricity, impulsiveness, emotionality, coquetry, deceitfulness, and hypersexuality.

At the time, a considerable number of monographs on the disease “hysteria” were published in France, including the

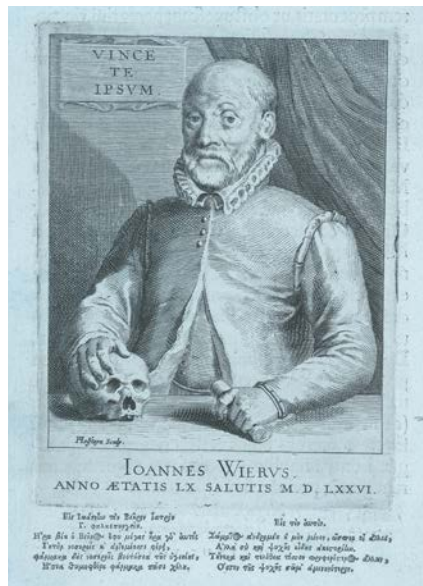


Figure 2. Joannes Wier(us); © Rijksmuseum Amsterdam.



Sigmund Freud © Freud Museum London.

ones by Jean-Louis Brachet (1789-1858),⁸ Ernest Mesnet (1825-1898),⁹ and Pierre Briquet (1796-1881).^{10,4} A few decades later, Jean-Martin Charcot (1825-1893) was working at the Salpêtrière and became interested in this condition. In fact, this was due to the fortuitous circumstance that the St. Laure ward had to be closed because the building was dilapidated, and the noninsane epileptics and hysterics had to be accommodated in his own ward in 1872.^{11,12}

Over the next six years, Charcot developed the nosographic category of “hysteria.” He sought to identify patterns and distinguish between phases, types, and *formes frustes*. One challenge was the lack of pathological-anatomical findings, unlike what he had observed in other conditions, including multiple sclerosis, amyotrophic lateral sclerosis, and tabes dorsalis.

Starting in 1878, he shifted his focus regarding “hysteria” from the anatomo-clinical method to physiological experimentation. He studied sensory symptoms using electrical instruments and employed hypnosis as a diagnostic tool. In all, he studied no fewer than 120 cases. He described hysterical paroxysms and distinguished four different phases. Regarding the cause, he hypothesized a hereditary predisposition combined



Figure 3. Ambroise Paré, © Rijksmuseum Amsterdam.



Figure 4. Thomas Sydenham © Rijksmuseum Amsterdam.



Figure 5. *Une Leçon Clinique à la Salpêtrière* by André Brouillet © Musée d'Histoire de la Médecine Paris.

with triggers (agents provocateurs). In women, these were often emotionally overwhelming experiences; in men, whom Charcot also diagnosed with this condition, they were usually physical traumas.

He believed that the absence of pathological-anatomical findings could be explained by the concept of a functional, dynamic lesion. However, he was still assuming the presence of an organic lesion. Although speculative, he suspected a cortical substrate. He observed that the sensory abnormalities did not follow any anatomical pattern. In Charcot's last years, there was a growing tendency to view “hysteria” through a psychological lens. Autosuggestion was thought to play a role in religious healings at pilgrimage sites.^{13,4} In that context, he wrote an article, titled “La Foi qui Guérit (The Faith that Heals).”^{14,15}

Another Paradigm Shift: From Neurology to Psychiatry

In the winter of 1885-1886, Sigmund Freud (1856-1939), who had studied medicine in Vienna under physiologist Ernst Brücke (1819-1892) and neuroanatomist Theodor Meynert (1833-1892), visited Charcot's clinic with the intention of studying neuropathology and gaining clinical experience. His visit

coincided with a period when Charcot was frequently demonstrating cases of “hysteria.”

To gain admission into Charcot's inner circle, he offered to translate Charcot's books into German. A sort of father-son relationship developed, in which Freud expressed both criticism and admiration for Charcot's work. He later named his son Jean-Martin (1889-1967) and kept a copy of the famous painting by André Brouillet (1857-1914), “Une Leçon Clinique à la Salpêtrière,” with him for the rest of his life. (See Figure 5.)¹⁶

When Freud left Paris, Charcot asked him to write an article on the distinction between organic and hysterical paralysis. It was not published until 1893, with the first three parts being “neurological” and the fourth “psychological.” The latter was likely written just before publication.¹⁷ Freud's article remains instructive and useful in the study of functional disorders.¹⁸

After Charcot's death, an intellectual impasse arose regarding “hysteria,” as researchers were unable to pinpoint the lesion, and a sense of therapeutic nihilism prevailed. At the same time, however, there was a growing tendency to approach the concept of “hysteria” from a psychological perspective, which

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ultimately led to a paradigm shift from a neurological to a psychological perspective.⁴ A recent article revealed that Charcot was, in fact, on the verge of accepting a psychological basis for traumatic “hysteria,” as he had written in an unpublished lecture shortly before his death.¹⁹

In addition to Freud, Pierre Janet (1859-1947), one of Charcot’s students, played an important role in the development of the psychodynamic model of “hysteria.” Rather than the physical symptoms, he was primarily interested in the psychological symptoms caused by emotional trauma. Freud’s further development of the concept of “hysteria” is well known for its ideas regarding repressed traumatic memories, hysteric conversion, and ultimately, after 1905, a purely psychological theory about sexual desires and fantasies that remain unconscious as a form of self-defense.

His treatment method in the meantime had shifted from electrotherapy to hypnosis and temporal massage, eventually settling on free association. Through psychotherapy, the patient must become aware of the event that caused the hysterical repression. One could argue that the condition known as “hysteria” was dominated by psychoanalysis during the first half of the 20th century.

Meanwhile, a marked decline in the number of cases of “hysteria” was observed. Moreover, the clinical pictures were simpler and less flamboyant. Various causes have been suggested, such as social and sexual emancipation. Here, “hysteria” was seen as being caused by a psychological effect of the 19th-century English and German social system characterized by sexual repression, suppression of emotions, and social suffocation. The disappearance of these factors was referred to as “de-Victorianization.”

Another hypothesis was the increasing psychological literacy, whereby emotions had previously been somatized, but could eventually be better articulated. Medical historian Marc Micale, however, presented arguments to show that the causes are better sought in the realm of nomenclature and nosology. He posited that the lack of a sound etiological concept and the expansion of the symptomatology led to broad and vague diagnostic categories.

He also said “hysteria” was ultimately absorbed into three other diagnostic categories, namely epilepsy, dementia praecox (later termed schizophrenia by the Swiss psychiatrist Eugen Bleuler (1857-1939)), and psychoneurosis. The latter was a purely psychological category, including obsessions and phobias, and should not be confused with Cullen’s original concept of neurosis, which was still considered an organic nervous disorder

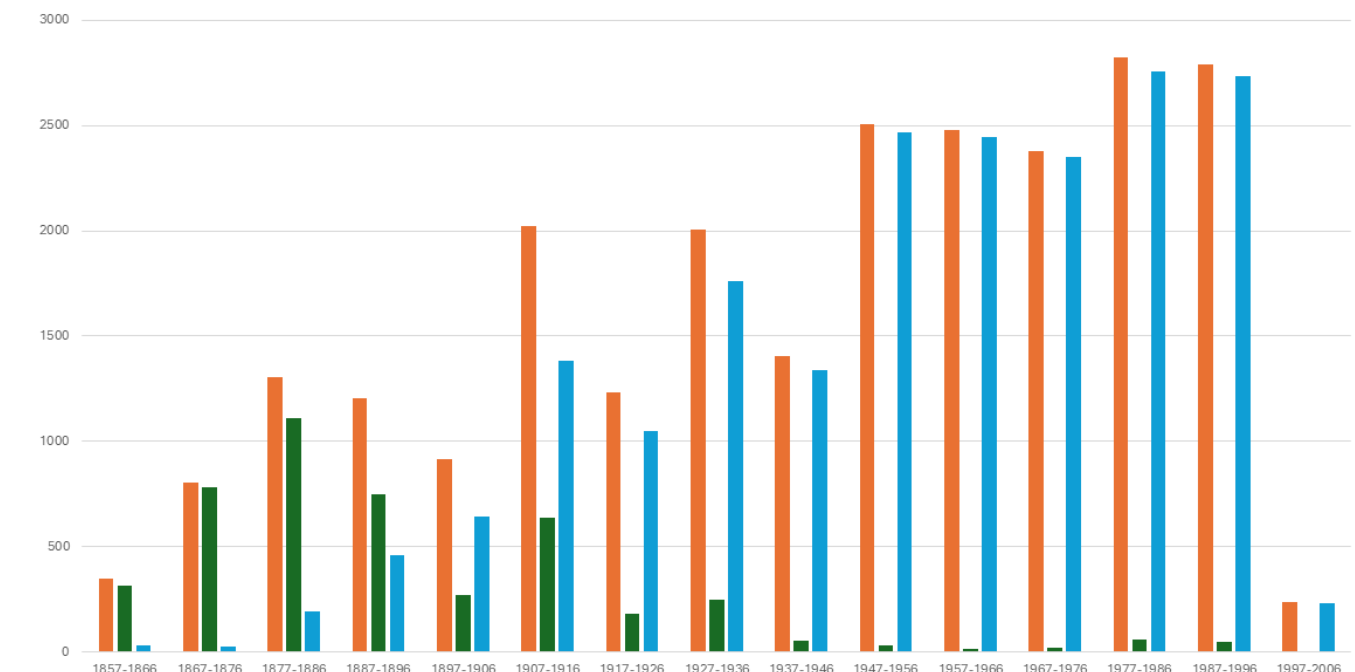


Figure 6. “Hysteria” frequency in Dutch newspapers (orange: total number of hits; green: ads; blue: articles).

for which no pathological substrate had (yet) been found.²⁰

“Hysteria” in ICD and DSM

In the various editions of International Classification of Diseases (ICD), which evolved from the International List of Causes of Death and was adopted by the World Health Organization following its establishment in 1948 (ICD-6), we see that “hysteria” was already included in ICD-2 (1909). It was later renamed conversion “hysteria” (ICD-8 and -9; 1965 and 1975, respectively). In 1992 (ICD10), it became dissociative disorder, hysterical, and in 2020 (ICD-11) “hysterical disorder” was only mentioned in the supplementary chapter of Traditional Medicine Conditions.

In the Diagnostic and Statistical Manual of Mental Disorders (DSM), we see a similar trend, albeit at an earlier stage. In 1952 (DSM-I), it was mentioned among the psychoneurotic disorders, in 1968 (DSM-II) in class IV, neuroses, and in 1980 (DSM-III), among the somatoform disorders. The DSM-IV (1994) mentions somatization disorder (“historically referred to as “hysteria” or Briquet’s syndrome”). The disorder is no longer listed in the DSM-5 (2013).

Meanwhile, in 1958, the characteristics of the hysterical personality disorder were described, including vanity, theatrical behavior, and flirtatiousness. These were likely linked to the concept of the hysterical constitution/temperament from the mid-19th century (Griesinger, Falret, Möbius, as mentioned above). In 1968 (DSM-II), it was designated as the primary diagnosis of hysterical personality disorder (with “histrionic” — from the Latin *histrion*, meaning “actor” — in parentheses after it). In DSM-III (1980), the two terms were exchanged (hysterical between parentheses).

“Hysteria” in Medical Journals and Press

If we trace the history of the word “hysteria” in a dictionary, we see an

interesting development that reflects advances in medical knowledge. The term does not appear in an authoritative Dutch dictionary from 1864. In the fourth edition in 1898, we encounter the entry for “hysteria” for the first time, defined as: (medical) a certain female ailment, manifesting itself in mood swings, paralysis, cramps, nervousness, etc.

In the 14th edition (2005), it has two meanings, namely:

- (medical) a set of conversion symptoms for which no physical cause can be found
- compared to “hysteria,” excessive excitement.

By 2021, however, the term no longer had a medical meaning; instead, it is defined as a state of mind in which a person loses self-control, for example, due to fear, panic, or intense admiration.

Historical Dutch newspapers reveal an interesting phenomenon. (See Figure 6.) Between 1850 and 1930, we see a rise followed by a decline in the total number of mentions, advertisements, and articles. However, as the number of advertisements declined in the 1920s and 1930s, the number of articles began to rise, continuing into the 1990s. Sampling shows that this effect is caused by the two different meanings the term acquired in the 20th century.

This increase in articles containing the terms “hysteria” or “hysterical” can be explained by their nonmedical use. A newspaper, for example, ran the headline “A Bricklayer From Wales Became a Global Superstar. Wherever Tom Jones Appears, Women Become Hysterical.” Another described the “gold hysteria” caused by the high price of gold.²¹ The peak in the number of advertisements in the 1880s was caused by the use of the medical meaning of “hysteria.” At that time, the articles also focused on that meaning. The subsequent increase in the number of articles is caused by the nonmedical meaning that gained the upper hand after about 1930. I expect the same phenomenon will be found in American newspapers.

The rise and fall of the medical use can be confirmed by examining the occurrence of the term in the *Nederlands Tijdschrift voor Geneeskunde* (Dutch Journal of Medicine; see Figure 7). The *New England Journal of Medicine* (Boston Medical and Surgical Journal before 1928) has 2,342 entries between 1814 and 2024. This search yields 117 pages, with 20 references per page (plus two references on p. 118). The last 14 pages cover the period between 1941 and 2024, which means that most of the articles were published between 1814 and 1940 (96%).

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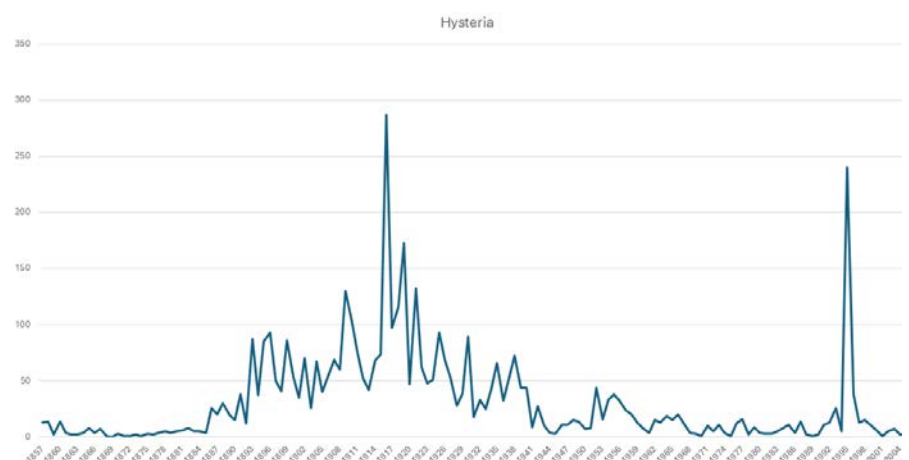


Figure 7. “Hysteria” frequency in the *Ned Tijdschr Geneesk* (1857-2005); the peak in 1995 is due to a special issue marking the centennial of *Studien über Hysterie* (1895).

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"Hysteria" in Fiction and Art

"Hysteria" was also a popular theme in fictive literature during the period mentioned earlier. We see this particularly in novels from the literary Naturalist movement. In the novels of the French writer Émile Zola (1840-1902), who can be regarded as the founder of literary Naturalism, and his followers, many aspects of this condition, which was widespread at the time, can be found.^{22, 23}

Joris Karl Huysmans (1848-1907), for example, writes in his novel "Là-bas": "My mother's housemaid had a daughter who suffered from paralyzed arms and legs, severely suffering from the chest, roaring when she was touched" She had been suffering for two years.

"Dismissed from the Lyon hospitals as being incurable, she came to Paris, followed a treatment at the Salpêtrière, she went without anybody knowing what she had and without any drug giving relief."

She was brought to an exorcist in Paris. "Miss, you're a victim of the evil of consanguinity." He let her remember the quarrel she had with her aunt two years previously, when the paralysis started, and cured her without touching her or prescribing drugs.²⁴

As another example, I mention Guy de Maupassant (1850-1893), who attended lectures at the Salpêtrière during the period 1884-1886. As early as 1882, he criticized the general use of the term "hysterical" by the press. "We are all hysterics, ... since Charcot, that breeder of chamber hysterics, maintains in his model establishment the Salpêtrière, at the expense of a number of nervous women, in whom he inoculates madness and of whom he makes demoniacs in no time... . All great men became like this. Napoleon I (not the other), Marat, Robespierre, Danton were like this. One often hears about Mrs. Sarah Bernhardt (1844-1923; well-known French actress). 'This is a hysteric.' The physicians also teach us that talent is a sort of 'hysteria,' and that it results from a cerebral lesion. Consequently, genius must arise out of two adjacent lesions; that's double 'hysteria.'"²⁵

Many other examples could be mentioned, including from more recent novels.²¹ André Breton (1896-1966), a former medical student under Joseph Babinski (1857-1932), who became a writer and poet (he was a founder of Surrealism) had a special interest in "hysteria" as can be found in the manifesto "Le Cinquantième de L'Hystérie (1878-1928) [The Fiftieth Anniversary of Hysteria (1878-1928)]" that he wrote with Louis Aragon (1897-1982).²⁶

It has been argued that not only did medicine and "hysteria" influence fiction, but the reverse was also true — a situation that is more relevant to the framing of diseases. The publication of "Madame

Bovary" (1857) by Gustave Flaubert (1821-1880) may have influenced diagnostic theories regarding the hysterical personality in the 1860s.⁴

As for "hysteria" and the visual arts, a link between Impressionism and hysterical dyschromatopsia was described in "**Charcot, Impressionism, and Functional Dyschromatopsia.**" If we consider the reverse situation — that is, if we ask whether the visual arts might influence medicine — one might point to the book "Les Démoniaques Dans L'Art" by Charcot and Paul Richer (1849-1933),²⁷ in which the authors describe works of art from earlier centuries depicting possessed individuals, who strongly resemble the patients they observed at the Salpêtrière.

"Hysteria" and Feminism

Although various time periods have been cited for the first and second waves of feminism, I will assume here that the first wave took place from approximately 1870 to 1930 and the second from 1965 to 1985. During the latter period, we witnessed a significant reinterpretation of the concept of "hysteria" in history.

A significant portion of the so-called new studies on "hysteria" in the second half of the 20th century consists of a revisionist historical examination from a feminist perspective of the subject. The history of "hysteria" was viewed as an important metaphor for the condition féminine. Historians have written, among other things, about the misogynistic prejudices surrounding the history of "hysteria" within the male-dominated medical world. The field of psychiatry was seen as having significant prescriptive power over social and moral values.

In the late 19th and early 20th century, women in England who fought for suffrage, education, and the right to divorce were often labeled with a psychiatric diagnosis. On the one hand, this served as an explanation for their behavior, and at the same time, it could be seen as a means of control. We recognize the influence of French philosophers such as Michel Foucault (1926-1984) and academic feminism in Paris. Micale noted that "hysteria" can be seen as a kind of metaphor for both the position of women in patriarchal societies in the past and the image of women in the history of scientific discourse.⁴

Summary and Conclusions

The history of the concept of "hysteria" spans a period of 2,500 years, initially under a different name (uterine suffocation). Several paradigm shifts have occurred, in which sociocultural factors prevalent at the time played a significant role. Around the time it was localized in the brain, in the Renaissance, the term "hysteria" was introduced. In the 17th century, it was recognized that this condition also affected men, but the term "hypochondria" was used.

In the second half of the 19th century,



Emile Zola, © Rijksmuseum Amsterdam.

the prevalence appeared to be increasing, and the condition was also diagnosed in men. Over the course of the 20th century, after it was assumed that the condition had a psychological cause, the disease began to subside and eventually disappear.

Although the medical meaning of the word "hysteria" faded, its popular meaning grew. The symptoms were still described under other terms; today, they are primarily classified as functional neurological disorders. Over the past 20 years, Jon Stone, consultant neurologist at the Royal Infirmary of Edinburgh and the University of Edinburgh, U.K., has conducted extensive research on this condition in collaboration with international colleagues and has created a **multilingual website** for patients with functional neurological disorders.²⁸

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- See [Functional Neurological Disorder \(FND\) – A Patient's Guide to FND](#) (last accessed March 29, 2026).



Sarah Bernhardt © Rijksmuseum Amsterdam.

JUNIOR TRAVELING FELLOWSHIP

WFN Junior Traveling Fellowship Report From the 2026 European Stroke Organization Conference

Conference highlights included an abstract presentation and the latest information on clinical trials and new treatment approaches.

BY DR. MADALITSO NTHERE

I would like to sincerely thank the World Federation of Neurology for this wonderful initiative and for giving me the opportunity to be one of its beneficiaries. Its support made it possible for me to attend and present at the 2026 European Stroke Organization Conference (ESOC) May 6-8, in Maastricht, Netherlands.

I come from Zambia, a country in the southern part of Africa, where I am currently a junior resident medical doctor in the department of neurology at the University Teaching Hospital in Lusaka, the largest hospital in the country. Over the past few years, I have had the privilege of being involved in several research projects.

This year, our team's abstract was accepted at the ESOC. Our abstract was titled "Evaluating the Utility of Echocardiography in the Diagnostic Workup of Stroke Patients in Resource Limited Settings." Being accepted to present at such a prestigious conference was a huge milestone for my team and me.

Beyond presenting our research, I met and interacted with professors,

researchers, and health care professionals from different parts of the world.

Listening to the work being done globally in stroke medicine was inspiring and motivating, especially coming from a setting where resources are often limited.

One interaction that stood out to me was meeting Prof. Jorge Pagola from Barcelona, Spain. He was interested in our research and in the realities of stroke care in our setting. After our discussions, he generously offered to train some of our doctors, including me, in transthoracic echocardiography over a two-week period, free of charge. He explained how important this skill would be in our setting because of the types of strokes we commonly encounter. This opportunity alone will have a lasting impact on our department and on the care we provide to patients back home.

The conference also gave me the opportunity to learn about the latest clinical trials, new treatment approaches, technological innovations, and the growing role of artificial intelligence in stroke medicine. It was inspiring to see how rapidly the field is advancing and encouraging to think about how some of these ideas can eventually be applied in



Dr. Madalitso Nthere at the 2026 European Stroke Organization Conference in Maastricht, Netherlands.

our own health care system.

Thank you once again for believing in young professionals like me and for creating opportunities that truly make a difference. Your support did not just help one individual attend a conference; it opened doors for learning, collaboration,

and future growth that will positively impact many patients and health care workers in our setting. •

Dr. Madalitso Nthere is a junior resident in the department of neurology at the University Teaching Hospital in Lusaka, Zambia.



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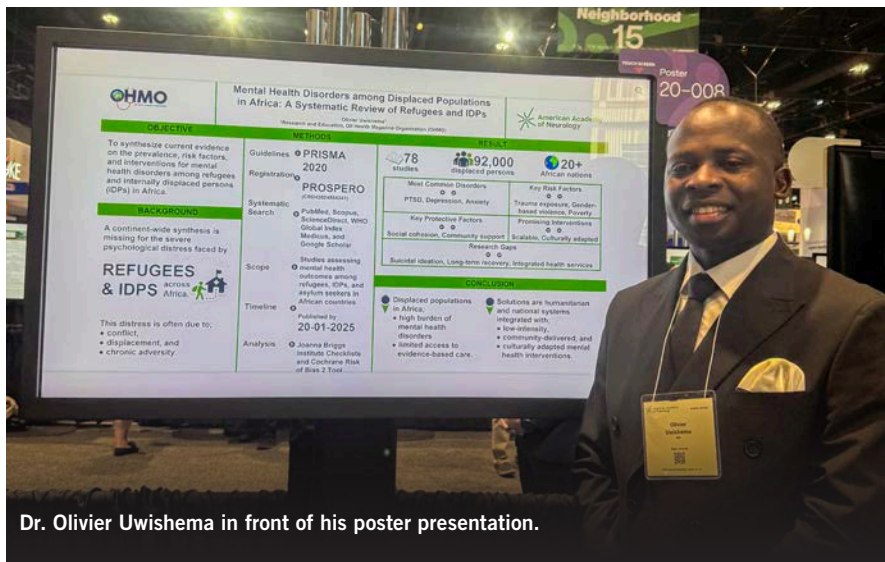
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JUNIOR TRAVELING FELLOWSHIP

WFN Junior Traveling Fellowship Report From the American Academy of Neurology Annual Meeting

Research presentations, mentorship, and global engagement shape the experience of a young neurologist from Rwanda.



Dr. Olivier Uwishema in front of his poster presentation.

BY DR. OLIVIER UWISHEMA

I was deeply honored to be selected as a recipient of the World Federation of Neurology (WFN) Junior Traveling Fellowship 2026, which supported my participation in the American Academy of Neurology (AAN) 2026 Annual Meeting, April 18-22, 2026, in Chicago.

As part of this prestigious opportunity, I presented my research titled “Mental Health Disorders Among Displaced Populations in Africa: A Systematic Review of Refugees and IDPs.”

This work was conducted under the Research and Education division of

the Oli Health Magazine Organization (OHMO). The study systematically synthesized evidence regarding the prevalence, risk factors, and interventions related to mental health disorders among refugees and internally displaced persons (IDPs) across Africa.

The systematic review included 78 studies involving more than 92,000 displaced individuals from over 20 African countries. The findings demonstrated a substantial burden of mental health disorders among displaced populations, particularly post-traumatic stress disorder (PTSD), depression, and anxiety. Key risk factors identified included trauma

exposure, gender-based violence, poverty, and prolonged displacement, while social cohesion and community support emerged as important protective factors.

Importantly, the study highlighted the urgent need for scalable, culturally adapted, and community-delivered mental health interventions integrated into humanitarian and national health care systems throughout Africa. The study also identified major research gaps, particularly regarding suicidal ideation, long-term recovery trajectories, and integrated mental health services for displaced populations.

Presenting this work at the AAN Annual Meeting provided an invaluable opportunity to engage with neurologists, neuroscientists, researchers, clinicians, trainees, and global health leaders from around the world. The conference featured outstanding scientific sessions, innovative research presentations, and important discussions on neurological disorders, brain health, neuropsychiatry, neuroimmunology, global neurology, and advances in clinical neuroscience.

During the poster presentation sessions, I had the privilege of discussing my research with numerous international attendees, including clinicians and researchers interested in global mental health, humanitarian neurology, refugee health, and public health policy. These interactions generated meaningful discussions regarding the integration of mental health services into humanitarian

responses and the importance of expanding evidence-based neurological and psychiatric care in low-resource settings.

The meeting also provided exceptional networking and mentorship opportunities. I was able to connect with distinguished leaders in neurology and global neuroscience, exchange ideas on future collaborations, and gain valuable insights into advancing research that addresses neurological and mental health disparities affecting vulnerable populations worldwide.

Receiving the WFN Junior Traveling Fellowship was both an honor and a major source of encouragement in my academic and professional journey. I am sincerely grateful to the WFN for supporting young researchers and promoting global participation in neurology and brain health initiatives. This opportunity significantly strengthened my commitment to advancing research, education, and advocacy focused on mental health, neurology, and underserved populations in Africa and globally.

I also extend my gratitude to the AAN for organizing such an impactful and scientifically enriching meeting that fostered learning, collaboration, mentorship, and international engagement among neurologists and neuroscience professionals worldwide. •

Dr. Olivier Uwishema is a young neurologist from Kigali, Rwanda. He is also founder of the Oli Health Magazine Organization (OHMO).

WFN 2026 Election Details

WFN President Prof. Steven Lewis identifies key decisions up for vote this election cycle, beginning Sept. 28.

As the World Federation of Neurology (WFN) prepares for its upcoming Annual General Meeting of the Council of Delegates (COD) Oct. 27, 2026, the global neurological community is entering an important election cycle.

Since 2020, the WFN has successfully used a secure, remote electronic voting (e-voting) system. This approach ensures that every member society has an equal voice in shaping the organization’s leadership and future activities, completely removing the logistical barrier of needing to attend the annual meeting in person.

This year’s ballot features three key decisions for our global membership.

- Delegates will vote on the position of secretary general for a four-year term spanning 2027-2030.
- An election will be held for one elected trustee to serve a three-year term 2026-2029.
- Following our January announcement shifting the World Congress of Neurology (WCN) to an annual regional rotation starting in 2028, member societies will vote to select the official host venue for the 30th World Congress of Neurology (WCN 2029) from the shortlisted bidders within the

region of the Americas (to be listed on the [WFN website](#) soon).

Earlier this year, the WFN Nominating Committee invited and thoroughly reviewed standard applications to compile the recommended list of candidates. Their statements are published on pages 16 and 17 of this issue of *World Neurology* and on the [candidate’s page](#) of the WFN website.

To keep the process open and comprehensive, late nominations for these positions remain possible until Aug. 28, 2026. Late nominations must meet additional requirements, including the formal support of at least

five different member societies.

The three-week e-voting window will officially open Sept. 28, 2026, running until mid-October. To maintain a smooth and fair election, voting credentials will be sent exclusively to the authorized voting delegates submitted by each society, with voting eligibility remaining dependent on up-to-date member dues through the Oct. 9, 2026, administrative deadline. This collaborative process ensures our leadership directly reflects the shared vision of our worldwide neurological community.

See Candidate Statements beginning on page 16. •

MEET THE WFN 2026 SECRETARY GENERAL CANDIDATES

Three candidates have been recommended by WFN's Nomination Committee for the upcoming election for the position of secretary general to take place by electronic voting in September. Results will be presented Oct. 27, 2026, at the Annual General Meeting of the Council of Delegates. Each candidate has presented their statement for your review.

CANDIDATE STATEMENT: MARIANNE DE VISSER



Marianne de Visser

I am a neurologist and professor emeritus of neuromuscular diseases at the University of Amsterdam in the Netherlands.

The first time I encountered the World Federation of Neurology (WFN) was in 1993 as a delegate of the Netherlands Society of Neurology at the World Congress of Neurology in Vancouver, Canada. I was

impressed by the large number of engaged delegates and wanted to contribute my own part as well.

From 2002 to 2008, I was an elected trustee under Jun Kimura and later Johan Aarli, both inspiring presidents. I witnessed President Aarli's successful outreach to the World Health Organization (WHO) and his Africa project, which he built with Gallo Diop from Senegal to spread knowledge of neurology across Sub-Saharan Africa.

I chaired the WFN Nomination Committee for many years, and later the Membership Committee. I worked hard with my committee members to expand the membership base, although there are still many African and Southeast Asian countries that are not yet members.

After holding board positions with the European Academy of Neurology (2014-2020), I became a WFN co-opted trustee under President William Carroll (2020-2021). A highlight of his presidency was the adoption of the Intersectoral Global Action Plan on Epilepsy and Other Neurological Disorders (IGAP) at the World Health Assembly in 2022, which is now being implemented worldwide.

Earlier this year, WFN President Steven Lewis appointed me acting secretary general, a position he held until he was elected president. It is a great honor to once again be part of the WFN, to work together toward the worldwide dissemination of knowledge in the field of neurology, and to invest in brain health, a fundamental social and economic priority.

I solemnly pledge that, should I be elected secretary general, I will do everything in my power to give neurologists worldwide a voice. •

CANDIDATE STATEMENT: MOHAMMAD WASAY



Mohammad Wasay

I am currently a professor of neurology at Aga Khan University Karachi. I previously served as president of the Pakistan Society of Neurology and the Pakistan Stroke Society. I am a fellow of the Royal College of Physicians (U.K.), the American Academy of Neurology (AAN), and the European Academy of Neurology (EAN).

I have worked with the

World Federation of Neurology (WFN) for more than 15 years, most recently as an elected trustee since 2023. I have served as chair of the WFN Advocacy Committee and chair of the World Brain Day Committee. Our work was instrumental in starting and organizing World Brain Day activities and promoting brain health across the globe.

My WFN assignments included chair of the Specialty Groups Committee and member of the Global Advocacy Leadership Program (GALP) steering committee. My advocacy training was done at the Palatucci Advocacy Leadership Forum, and I received two awards from the AAN: The Advocacy Leader of the Year Award in 2005 and the prestigious Kenneth Viste Award for Global Advocacy in 2024. Other awards to my credit include the AAN Teachers Recognition Award and gold medals from the Pakistan Academy of Medical Sciences and the Pakistan Academy of Sciences.

The growing global burden of neurological diseases has established the WFN as an important stakeholder in global health. The WFN's future leading role lies in creating a dynamic, collaborative environment and enhancing goal-directed interaction with delegate societies and regions.

My main agenda as secretary general would be to enhance education and training in neurology across the globe with a special focus on the application of diverse, multilingual digital tools. We will also focus on grassroots advocacy by increasing capacity building, engagement of member societies, and involvement of young neurologists via interactive platforms.

As secretary general, I will work with WFN leadership for the implementation of the WHO International Global Action Plan on Epilepsy and Other Neurological Disorders (IGAP), promotion of brain health across all regions and societies, financial strengthening of the WFN, and upgrading our office for future needs. •

CANDIDATE STATEMENT: TISSA WIJERATNE



Tissa Wijeratne

Thank you for taking the time to read my candidate statement. It is a great honor to stand for election as secretary general of the World Federation of Neurology (WFN).

A lesson I learned as a medical student in rural Sri Lanka has guided my career ever since: Where a person lives should never determine their access to quality neurological care. That belief continues to

inspire my work as a neurologist, educator, researcher, and advocate.

Although I have authored more than 400 peer-reviewed publications, I am proudest of developing people. Over the past 23 years, I have had the privilege of mentoring more than 200 neurologists, 550 physicians, and 52 PhD graduates, many of whom now lead clinical services, research, universities, and neurological organizations around the world.

The WFN has profoundly shaped my own journey. As a trustee and chair of the Public Awareness and Advocacy Committee, I have worked with colleagues from every region to strengthen education, advocacy, and international collaboration. Together, through World Brain Day, we have helped make brain health a truly global priority.

If elected, I will listen, serve, and deliver. I will work to strengthen every member society, foster collaboration, support education and research, empower the next generation of neurologists, and champion equitable access to neurological care — especially in low- and middle-income countries.

I firmly believe the WFN's greatest strength is its member societies. Together, we can build a stronger federation, advance brain health and access for all, and improve the lives of the 3.4 billion people living with neurological disorders worldwide.

It would be a great honor to earn your trust and serve as your secretary general.

I would welcome the opportunity to meet with your national neurological society to hear your ideas and priorities. •

MEET THE WFN 2026 ELECTED TRUSTEE CANDIDATES

Three candidates have been recommended by WFN's Nomination Committee for the upcoming election for the position of trustee to take place by electronic voting in September. Results will be presented Oct. 27, 2026, at the Annual General Meeting of the Council of Delegates. Each candidate has presented their statement for your review.

CANDIDATE STATEMENT: VALERY L. FEIGIN



Valery L. Feigin

I am Prof. Valery L. Feigin from New Zealand. I am director of the National Institute for Stroke and Applied Neurosciences at Auckland University of Technology, affiliate professor at the University of Washington, founding chair of the Global Burden of Disease Stroke and Neurology Collaborations, research fellow of the Royal Society Te Apārangi, and editor-in-chief of

Neuroepidemiology. I am honored to be considered for the position of elected trustee for the World Federation of Neurology (WFN).

For more than three decades, I have dedicated my career to advancing neurological health through research, prevention, education, policy, and international collaboration. Working with colleagues across world regions, I have contributed to improving understanding of the burden, causes, prevention, and management of neurological disorders and translating scientific evidence into action. I have also served on several World Health Organization (WHO) expert groups, including the WHO Stroke Advisory Group for the 11th revision of the International Classification of Diseases (ICD-11), where I contributed to the reclassification of stroke as a neurological disorder.

If elected, I would bring experience in global neurological leadership, partnerships, strategic planning, and evidence-informed policy development to the WFN board. My work has focused on strengthening neurological prevention, reducing inequities in neurological health, and supporting the use of evidence to guide policy and service planning worldwide.

I believe the WFN has an opportunity to further strengthen its leadership in brain health, education, advocacy, capacity building, and support for member societies — particularly in low- and middle-income countries where the burden of neurological disorders is greatest.

As trustee, I would work collaboratively with member societies to expand access to neurological knowledge and services, support the next generation of neurologists, and promote solutions that improve neurological health globally.

I would be honored to contribute my experience, energy, and commitment to advance the WFN's mission of fostering quality neurology and brain health for people, families, and communities worldwide. •

CANDIDATE STATEMENT: JANIS M. MIYASAKI



Janis M. Miyasaki

It is a privilege to be considered for an elected trustee position with the World Federation of Neurology (WFN) and to potentially contribute to WFN's mission of fostering quality neurology and brain health worldwide.

My involvement with the WFN has been active and sustained. From 2019 to 2024, I served as chair for the Palliative

Care Scientific and Teaching Sessions, helping to advance education and dialogue in an area of growing importance within neurology. I also served on the Scientific Advisory Committee from 2023 to 2024 and as an abstract reviewer in *Movement Disorders* from 2023 to 2025. I have also been an invited speaker at World Congress of Neurology meetings, contributing to sessions on advocacy, neuropalliative care, physician wellness, telemedicine, movement disorders, and brain health.

My broader international work reflects longstanding commitment to global neurology education, collaboration, and capacity-building. Through the International Parkinson and Movement Disorders Society, I held multiple leadership roles, developed an online educational program for neurologists without access to movement disorders fellowship training, and mentored international neurologists.

In the American Academy of Neurology, I served as treasurer and vice president, chaired the Global Task Force to strengthen support for international members, and continue to serve on the Global Subcommittee.

I contributed to the development of neuropalliative care in Asia, including a 3-day symposium in Hong Kong that led to implementation in two hospitals. In 2025, I taught undergraduate medical students in Wenzhou, China. These opportunities teach me about neurology practice internationally and the importance of advocacy to promote brain health for all.

If elected, I would bring experience in international education, organizational leadership, interdisciplinary collaboration, advocacy, strategic planning, and program development. I would work to support WFN's vision by strengthening global partnerships, advancing neurological education, and promoting equitable access to high-quality neurologic care worldwide. •

CANDIDATE STATEMENT: WALTER STRUHAL



Walter Struhal

I am grateful to the World Federation of Neurology (WFN) and the Austrian Society of Neurology (ÖGN) for considering me for the position of elected trustee.

I am a neurologist based in Tulln, Austria, with a subspecialty in neurocritical care. I serve as professor of neurology and head of department at the University Clinic Tulln at Karl Landsteiner

University. My clinical and academic interests include autonomic disorders, neurodegenerative diseases, neurocritical care, and medical education.

My engagement with the WFN began in 2009 when I initiated a Young Neurologists working group inspired by Vladimir Hachinski and Wolfgang Grisold. The inaugural meeting took place at the 2009 World Congress of Neurology in Bangkok. In 2010, I was invited by Raad Shakir to support the website team, and I helped establish the WFN's first social media presence. I subsequently contributed to the Education Committee and the Global Neurology Workforce Survey. From 2014 to 2023, I served on the E-Communication Subcommittee, overseeing the redesign and modernization of the WFN website.

I currently serve as editor-in-chief of *eNeurologicalSci* and co-editor of *World Neurology*. I have also served as president of the European Federation of Autonomic Societies, co-chair of the Ethics and Quality Advisory Board of EAN, and president-elect of ÖGN.

I believe in training and education in neurology to address the high burden of disease. WFN has a unique opportunity to strengthen e-learning, support blended learning, enable training and experience exchange through department visits, and foster on-site learning and support the initiatives of national neurological societies.

Global neurology collaboration is a central priority for WFN. In times when resources may shift from neurosciences and patient services, the WFN is of exceptional importance to advocate for global neurology — supporting initiatives aligned with WHO IGAP and the national neurological societies. I would be grateful for your support. Please vote for me if these priorities resonate with you. •



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