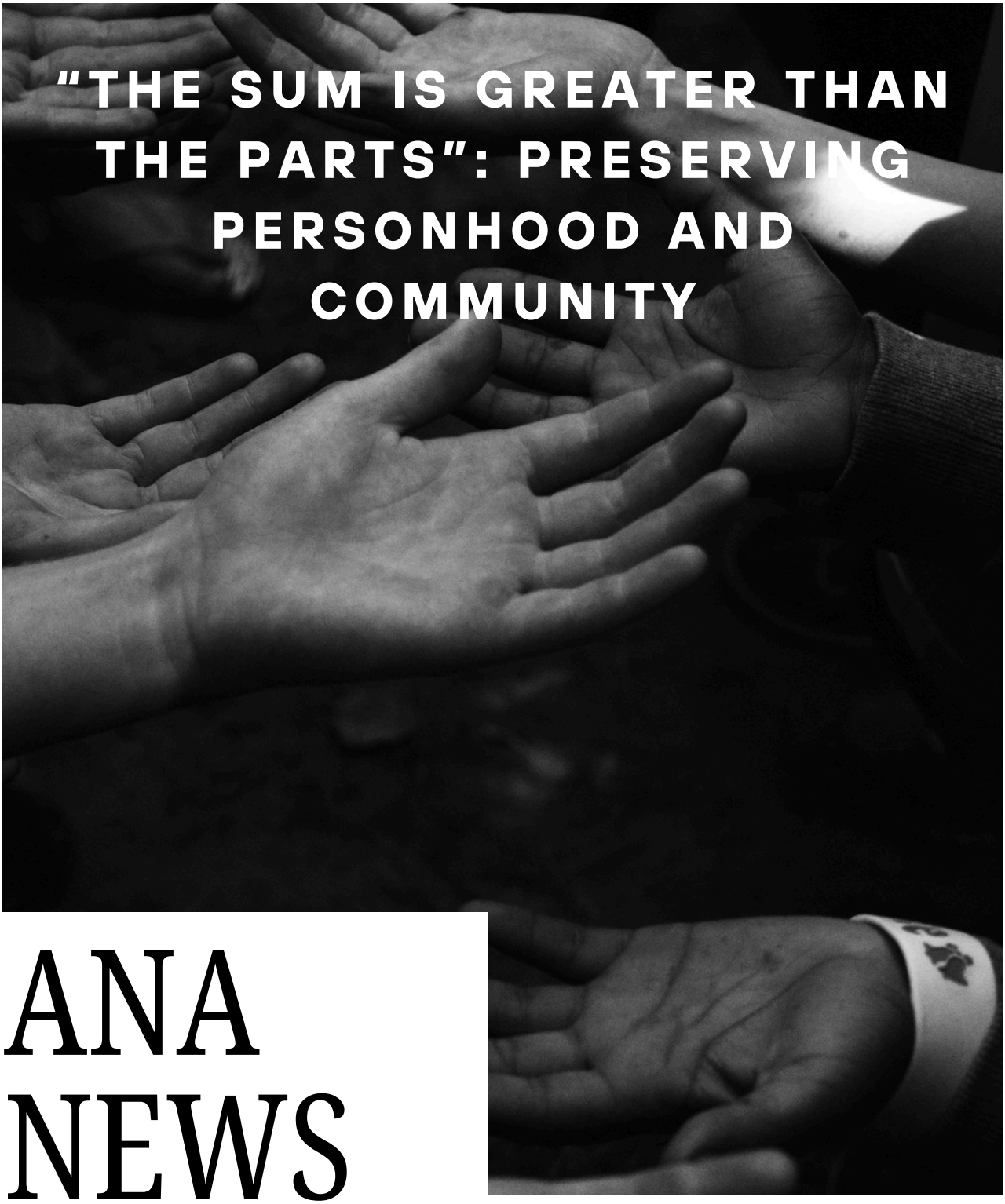

"THE SUM IS GREATER THAN THE PARTS": PRESERVING PERSONHOOD AND COMMUNITY

ANA NEWS

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Asian Neuropsychological Association

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MESSAGE FROM THE PRESIDENT

Dear ANA Family,

I hope you have been able to find happiness, contentment, rest, and relaxation during this past summer and the transition to the new academic year. It has certainly been an eventful time for me. We recently welcomed our second child, Emily, and I have spent the past month watching her grow (and trying to keep her alive in the process!). This experience has coincided with the first quarter of my ANA presidency, during which time I have had a similar experience of watching the organization grow (and also the parallel experience of trying to keep the organization alive!).

Caring for a newborn truly takes a village, and I am fortunate to have had a village of family and friends around me. Along the same lines, I am fortunate to be serving ANA amongst a village as well, a community of collaborative, passionate, and dedicated leaders. I want to take the opportunity to highlight all the great work our eight committees have been doing this year. Our Advocacy Committee has been a steadfast pillar in the organization, continuously compiling and distributing resources, whether through bulletins or webinars, and upholding their commitment to supporting our community and the patients we serve.

Our Education and Membership Committees have significantly supported our newly formed Board Certification Preparation Program, which is currently supporting its first cohort in preparing for their oral exams this fall; we hope the development of this program will lead to more representation of diverse board certified providers. Our Media Committee has helped to maintain the atmosphere of our community and the connectedness of our membership through their management of the website, newsletter, and social media platforms. Our Research Committee continues to support and highlight the researchers among our organization, while our Trainee Committee represents and supports our trainees, which makes up one-third of our entire membership!

Finally, our International Liaison and Optional Practical Training Ad Hoc Committees have been working on projects to advocate for our international professional and trainee members. Congratulations to the latter for their paper currently in press in the Journal of Clinical and Experimental Neuropsychology titled "Surveying Barriers to Training: A Call for Change for International Neuropsychology Trainees in the U.S."! I am full of respect and admiration watching as every committee seems to share the common goal of supporting, uplifting, and giving back to our community, and the success of ANA continues to be possible due to the passion and labor of its members. There are plenty of ways to get involved, so please do not hesitate to reach out to the different committees and special interest groups if you are looking for a way to contribute.

While in this stage of parenthood, I have also been in the throes of protecting my newborn from harm – it seems like everything around her is dangerous. At times throughout these past several months, I have felt the same way about our ANA community in the midst of recent times. As we navigate the complex and often distressing landscape of current events, I also want to take the opportunity to recognize the ongoing weight that everyone, domestic and international, may be carrying both personally and professionally, both for your families and for your patients. Whether related to executive orders affecting health equity initiatives, the state of immigrant and refugee safety, the persistent impact of gun violence, or other issues affecting the communities where we live or that we serve, I can personally empathize with a spectrum of feelings ranging between uncertainty, vulnerability, frustration, anxiety, fear, and exhaustion.

As neuropsychologists, we may be trained to understand the sequelae of such concepts, but this knowledge does not make us immune to the emotional toll these events exact. I might not have all the right words to say, but I know it is easy to feel isolated and unsafe, so I want to express on behalf of ANA leadership that we stand with you, and we remain steadfast in our commitment to supporting our members, our trainees, our patients, our communities, and our profession. We are continuing to discuss and take actionable steps to support advocacy, provide resources, and create safe spaces for dialogue, both as an organization and in solidarity with sister organizations, and we remind you to take advantage of such initiatives including our community circles, resource lists, webinars, and mentorship programs. But we also want to thank each and every one of you for continuing to uphold compassionate and culturally responsive care and for contributing to the shared resilience that comes from our ANA community.

The name "Emily" has various meanings, but I am particularly fond of "diligent" and "devoted". Please know that we are diligently here for you, and that we are devoted to continuing to show up and stand together. I look forward to watching the ongoing growth of our organization, and will keep trying my best to protect it as I do.

Sincerely,

Alexander Tan, Ph.D., ABPP-CN
President, Asian Neuropsychological Association

FEATURED NEUROPSYCHOLOGIST: DR. VIGNESWARAN VEERAMUTHU

BY NUMFON VILAY, M.S.

Dr. Vigneswaran Veeramuthu is a Malaysia-based clinical neuropsychologist specializing in advanced **intraoperative brain mapping for glioma and epilepsy surgeries**, with a strong focus on preserving higher-order cognitive functions such as social cognition, self-awareness, executive control, and emotional regulation. His clinical and research practice is deeply grounded in a **network-based, cortico-subcortical systems approach**, moving beyond traditional localization models to preserve not just life, but the *personhood* embedded within the brain.

He completed a clinical observership at the **University of California, San Francisco (UCSF)** under Prof. Mitchel Berger and Prof. Shawn Harvey Jumper, where he engaged in high-volume awake craniotomies and cutting-edge neuro-oncological mapping techniques. Dr. Veeramuthu continues to provide intraoperative and extra-operative neurocognitive mapping services at the **University of Malaya Medical Centre**, where he advocates for functional preservation across *both hemispheres*, particularly in underexplored domains like right-hemisphere cognition and non-language functions, along with the **dynamic system framework of the cortico-subcortical networks** — challenging long-standing norms in neurosurgical practice. Dr. Veeramuthu currently serves as a resident Consultant Clinical Neuropsychologist at **Thomson Hospital, Malaysia** as well. His clinical work spans **presurgical neuropsychological evaluations, real-time intraoperative cognitive monitoring**, and **post-operative rehabilitation planning**, ensuring continuity of care for complex neurosurgical patients.

A visionary in the field, he is actively developing a **3D brain mapping software platform** that integrates patient-specific MRI scans with known functional neuroanatomical data, serving as a real-time guide for neurosurgeons and clinical teams. He envisions a future where **neuropsychological neurosurgery is equitable, accessible, and standard of care** globally—especially in low- and middle-income countries. To that end, Dr Veeramuthu is building a global initiative that combines **clinical care, education, software innovation, and advocacy** to democratize high-quality cognitive brain mapping.

Dr. Veeramuthu is also the past **Founding President of the Society of Clinical Neuropsychology – Malaysia (MSCN/SCN)**, where he has been instrumental in building clinical training pipelines, advocating for professional recognition, and mentoring the next generation of neuropsychologists. He is also a member of several international bodies, including the **International Neuropsychological Society (INS), Asian Neuropsychological Association (ANA), National Academy of Neuropsychology (NAN)**, and the **Queer Neuropsychological**

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Society (QNS). He also serves as the **Co-Chair of ANA's International Liaison Committee** as well as the **member of the INS Education Committee.**

He is a sought-after speaker and educator, known for his clarity in teaching complex neuroanatomical concepts and his commitment to bridging cognitive neuroscience with real-time neuropsychosurgical application. Dr. Veeramuthu exemplifies a rare hybrid of **clinical precision, academic rigor, and visionary innovation**, positioning him as one of the catalysts in evolution of neuropsychology within modern neurosurgery, locally and internationally.

"Every millimeter of the brain matters—especially when it carries who the person is"
To preserve personhood—not just survival—in every brain surgery.
"Neurosurgery can save the brain. But without the right map, it can lose the mind"
(Dr Veeramuthu's 3 Guiding Principles in Brain Mapping)

What motivated you to be a neuropsychologist? How did you get into this career?

I think it all started with my fascination with human behavior and the thought processes behind it, basically, trying to understand "why people do what they do". When I decided to pursue my doctoral training, I felt a strong need to better understand the neurobiological basis of criminal behavior. My early academic work had focused on forensic populations, including individuals involved in organized crime, white-collar crime, and sexual offending. However, I realized I lacked a deep understanding of the neuroscience behind these behaviors. To bridge that gap, I applied for a clinical internship at the Division of Neurosurgery, University of Malaya here in Malaysia.

I was fascinated by the way neurosurgeons interacted with the brain and by the functional and behavioral outcomes I observed in patients. That exposure was pivotal. I ended up completing a year-long clinical attachment in that unit, where each neurosurgeon specialized in a different area of neurosurgery. This allowed me to see firsthand how critical it was to understand patients' cognitive and behavioral outcomes in a medically complex setting. It solidified my decision to pursue neuropsychology. Although I had always been interested in the biological basis of behavior, I hadn't initially imagined that psychology, particularly neuropsychology, would become my path.

Prior to this, I had completed a master's degree in educational psychology. I later applied to a PhD program at Duke University,

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specifically aiming to work with Dr. Ahmad Hariri, a renowned neuroscientist and neurogeneticist who studies various populations, including forensic groups such as sexual offenders. To better prepare for that path, I intentionally sought out more neuroscience exposure, which brought me into contact with the neurosurgical world as I mentioned earlier. Lo and behold, I ended up doing my PhD in Clinical Neuropsychology (Neurosurgery) under the supervision of two neurosurgeons, namely, Prof Vairavan Narayanan and Prof Dharmendra Ganesan and a neuroradiologist, Prof Norlisah Ramli. At that time, Malaysia did not have any locally qualified neuropsychologists, so I needed to find an external clinical supervisor for my doctoral training. That is how I was connected with Dr. Mark William Bondi from UCSD through Dr Pollyana Casmar, who then agreed to supervise my PhD. Because I was still based in the neurosurgical unit in Malaysia, I traveled back and forth to the U.S. for clinical fellowship and training, spending a couple of months there each year to gain supervision and hands-on experience. I also completed my fellowship at Hawaii Pacific Neuroscience Institute in 2013 while concurrently working on my PhD.

When I started, there were no formal neuropsychology training programs in Southeast Asia. Other than University of Malaya, where I trained, the other universities in the region did not launch their first structured PhD program in neuropsychology until 2018. So, for me, it was an unconventional journey.

What cultures do you identify with?

I was born to mixed-race parents. My father is half Thai, half Indian, and my mother is of Sri Lankan Tamil descent. Genetically, I am Southeast Asian with Thai, Chinese, Vietnamese, Sri Lankan, and Indian ancestry, and even some Central Asian ancestry. So, I have always identified as mixed-race.

Looking back, how has your cross-cultural journey unfolded throughout your life?

Being multicultural helped me appreciate and understand the diverse experiences of the patients I work with. In Malaysia, we live in a very multicultural, multilingual, multi-religious society. This greatly influences clinical neuropsychology work. Many of our neuropsychological tests are designed for Western, largely monolingual populations, so cultural and linguistic differences can significantly affect outcomes. I speak Malay, English, and Tamil fluently, understand some Vietnamese, and comprehend Mandarin fairly well. Many Malaysians speak 2–3 languages at minimum. So, when we assess patients, especially for surgeries like epilepsy or tumor resections, language and culture heavily influence outcomes. For example,

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Chinese dialects like Mandarin are tonal, which affects brain representation of language. A multilingual Mandarin speaker may have bilateral language representation, requiring different mapping techniques than someone who speaks a non-tonal language. Cultural norms also affect patient responses. A delayed or hesitant answer may be cultural, not a deficit. Some test stimuli though are not culturally sensitive nor adapted, which further complicates interpretation. This awareness deepened during my training, especially when I started seeing the limitations of Western-based cognitive tests in non-Western populations.

Although I did not face major barriers applying for college or graduate school within Malaysia, navigating training across countries definitely highlighted the need for culturally sensitive clinical practices.

What were some of your expectations for your career path when you first started this process?

Back then, there were already people conducting neuropsychological evaluations in Malaysia, primarily clinical psychologists. They stepped into that role largely because there were no formally trained or qualified neuropsychologists in the country at the time. So, for many years, they carried out neuropsychological assessments as best they could, despite the lack of structured training in the field.

Our earliest publications in neuropsychology-related research only date back to the late1990s, which is not that long ago. When it came to implementing neuropsychological evaluations based on recognized standards and best practices, that is when my role within the institution really began to take shape. I was tasked with conducting evaluations for a wide range of patients, and through that work, clinicians, especially neurosurgeons and neurologists, began to see the value of having a neuropsychologist as part of the care team.

It became clear that neuropsychologists do much more than administer cognitive tests. We contribute meaningfully to treatment planning and to shaping rehabilitation strategies. A fortunate aspect of my training was that, while I was based in the neurosurgical unit, I was also exposed to neuroradiology and neuroimaging. My PhD work focused on advanced imaging techniques such as diffusion tensor imaging and MR spectroscopy. I was particularly interested in white matter tract integrity and neurochemical changes in the brain as well as the genetic predisposition of the patients, and how these impact cognitive outcomes. This integration of neuroimaging,

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neurogenetics, neurosurgery with neuropsychology strengthened the clinical decision-making process.

Cognitive testing became one of many tools in our arsenal, rather than the sole source of information. So, in that sense, foundational neuropsychology work really began to take root during my time training and practicing within the unit. That said, I want to acknowledge that others laid the groundwork before me. Even if they did not hold the formal title of neuropsychologist nor trained as one, those clinical psychologists were doing vital neuropsychological work long before there were any certified professionals in the country.

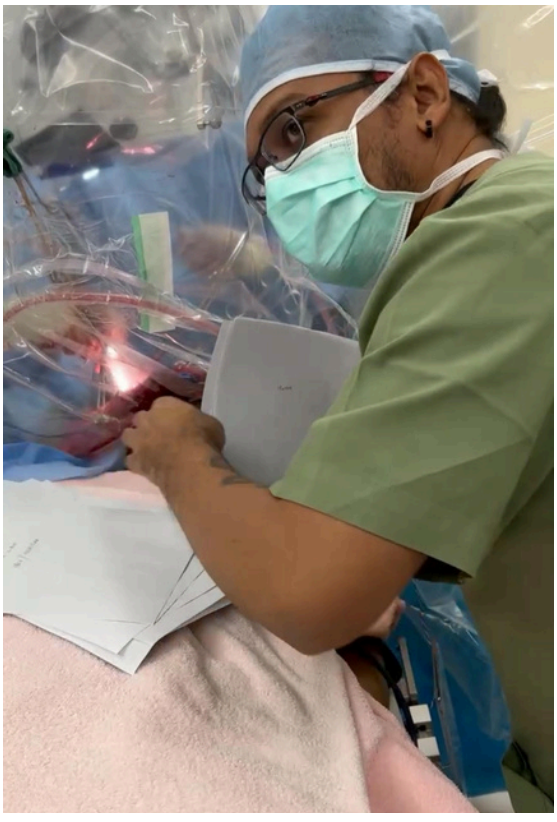
Is there a board-certification process in Malaysia?

There is not an equivalent certification process in Malaysia to the U.S. There are only maybe three PhD-qualified neuropsychologists currently practicing. Others get their certification abroad in places such as the U.S., UK, Australia, or Europe. We eventually established the Society of Clinical Neuropsychology Malaysia (SCN) in 2018. It was formally recognized by the Ministry of Health in 2023 as the governing body for our field. Anyone practicing neuropsychology must now be registered with SCN.

I am not currently board certified in the U.S., but I have explored the process. For internationally trained professionals, board certification can be complex due to requirements for licensure, exam equivalency, and clinical supervision. However, I see value in board certification for standardizing and validating expertise, especially for those working across systems.

What tips or words of wisdom would you give to our readers?

Have passion and perseverance- it's a long and emotionally demanding journey. There are a lot of things that you are going to face along the way while you are training to become a neuropsychologist. Doing a doctorate in itself can be a very lonely journey. You might feel like giving up a lot of the time, but you have to persevere through it, mainly because it is during this process that refine not just your clinical skills but also molds you as a person who can sustain being in this practice.



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In the early parts of your training, I think it is very important to build your network with different individuals within the field. Get to know them and learn from them. Build a strong network and seek exposure to different populations through internships and research. Importantly, don't forget the "neuro" in neuropsychology. A solid grasp of functional neuroanatomy is essential. We tend to rely too heavily on cognitive tests and forget the underlying neuroscience. Exposure to neuroimaging, cultural and linguistic differences, and international practices is also important. Try working outside the U.S. to see how limited resources affect practice. Diversity and cultural sensitivity are essential to becoming a well-rounded neuropsychologist.

ABCN and various neuropsychological associations have been encouraging increased representation from ethnic minority applicants. What supports have you found as an ethnic minority applicant in this process?

While this was not formalized as an application process, being an ethnic minority in a developing country meant that much of the infrastructure for neuropsychology did not exist. I had the opportunity to help build it. The support I received came from mentors in the U.S. and locally, and from a growing network of like-minded clinicians and researchers committed to growing the field here.

What advice do you have for an ethnic minority applicant?

Find mentors who understand your background and can help guide your growth. Seek international experiences when possible. They broaden your view of neuropsychology in ways that textbooks can't. Also, advocate for inclusive and culturally sensitive practices within your training and clinical work.

What do you find most rewarding, interesting, challenging, or fulfilling about your work?

I love being a neuropsychologist. I wake up every day without regrets. It is rewarding personally and professionally. Our involvement, from diagnosis to treatment planning and intervention, makes a real difference in patient outcomes. Our pre-surgical evaluations as well as the intra and extra-operative mapping for brain tumor and epilepsy patients in Malaysia (specifically at University Malaya Medical Centre) are on par with many of the U.S. top neurosurgical /neurological centers. I owe that to my mentors, locally and abroad, who helped me bring those skills back here and globally. My mapping work is well known, and I can collaborate and work internationally, which, for me, is crucial. That level of impact and fulfillment will keep me going for another 30 years of my life. Additionally, in recent years, I have also embarked on global neuropsychosurgical initiatives and capacity building efforts in Africa (South Africa,

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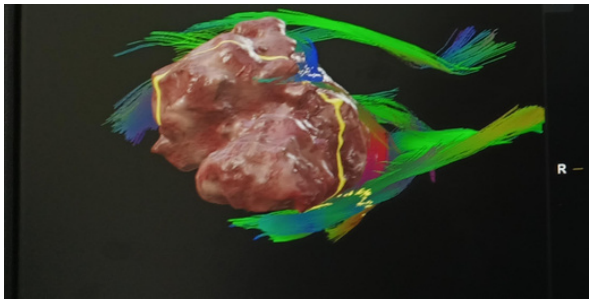
Zimbabwe, Kenya), Asia (India, Nepal) and the Americas (South).

What would others be surprised to learn about you?

What most people don't see is where it all began. I was seven when I lost my father to gun violence. Raised in a Malaysian ghetto by a single mother with five mouths to feed, I grew up in the margins, surrounded by poverty, marked by difference, and shaped by years of systemic bullying and quiet resilience. There were no maps for where I was going, only instinct, grit, and a growing fascination with the brain: how it breaks, how it recovers, and how it holds memory, pain, and hope all at once. Years later, I would find myself guiding neurosurgeons through the delicate dance of awake craniotomies, helping preserve speech, memory, and the personhood of who they are - sometimes reminding me of the communities I came from.

And somewhere along the way, my curiosity kept expanding - beyond skull and cortex, into orbit. I now find myself drawn to questions most neuropsychologists don't ask: What



happens to the mind in microgravity? How would we perform brain surgery or brain mapping in microgravity environment? How does cosmic radiation sculpt the hippocampus? Can we still call it 'consciousness' if it's drifting between planets?

I suppose people are surprised that someone from the edge of the map ended up studying how brains behave when maps no longer apply.

From your rehabilitation work, what are the most important and/or innovative interventions for cognitive recovery in neurosurgery patients?

Neuropsychologists play a critical role in rehabilitation, not just assessing deficits but helping patients recover. I prefer focusing on restorative over compensatory approaches, at least early on. Premature compensatory strategies may limit recovery. Goals should always be patient-centered. Understand how deficits impact their quality of life and involve caregivers when needed. Also, prehabilitation, like rewiring the brain before surgery, is possible using neuroplasticity principles. We also use techniques like navigated transcranial magnetic stimulation (nTMS). I believe in its power for improving

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cognitive and motor outcomes. We begin our neuropsychological intervention and neurorehabilitation in the ICU as soon as sedation lifts, as early intervention leads to better outcomes and prognosis.

How has working in both Western and Southeast Asian clinical environments shaped your approach to patient care and research?

While most of my training was in Malaysia, I frequently traveled to the U.S. for training. I worked with mentors like Drs. Mark Bondi and Lisa Delano-Wood at UCSD. Their focus on advanced neuroimaging and cognitive assessment in TBI and neurodegenerative disease gave me valuable insight. Likewise, my subsequent brief stint at the Department of Neurosurgery, UCSF Parnassus also greatly shaped my acumen as a clinician involved in intraoperative brain mapping. Training in the U.S., allowed me to work with excellent mentors and eminent world leaders of the field and access cutting-edge neuroimaging, neurotechnology, and research.

In Malaysia, I learned to navigate cultural, linguistic, and systemic challenges. These combined experiences have made me more thoughtful and intentional in my clinical work, especially when dealing with multilingual or resource-limited populations. It expanded my view of best practices and how to apply them flexibly across different populations.

What does meaningful leadership in global neuropsychology look like to you?

To me, meaningful leadership in global neuropsychology is about staying grounded in purpose, committed to equity, and open to integration. It's less about titles and more about doing the hard, unglamorous work of building systems that outlast you and ensuring those systems serve populations that have historically been left out.

It begins with **purpose**. Purpose keeps us centered on what matters most – our patients, their families, and the communities we serve. Our science has to lead somewhere meaningful, especially for those navigating complex neurological conditions in low-resource or multilingual settings. Then the **equity**. Equity means actively dismantling structural barriers, not just admiring diversity from a distance. It's about asking who gets to lead, who gets access to training, and whose knowledge counts. For those of us from underrepresented or underserved regions, this work is personal.

Lastly, the **integration**. And integration is key- because neuropsychology can't remain in its own corner. We need to be at the operating table, in tumor boards, in ICUs, working shoulder to shoulder with neurosurgeons, neurologists, radiologists, and rehab teams. We also need to integrate cultural and linguistic diversity into how we think, assess, and treat. If we're serious about global neuropsychology, we must stop exporting Western templates and start co-creating locally relevant ones.

For me, leadership means amplifying others, creating space, and building structures where future neuropsychologists, especially those from the Global South, can lead with

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confidence, not apology. And above all, it means never losing sight of the human stories behind the data. Leadership in global neuropsychology isn't about visibility - it's about building systems that work, especially for those who were never given a seat at the table.

Your 2024 scoping review on pediatric neuropsychology in Southeast Asia highlights the challenges of test adaptation. What are important future directives? Additionally, how does the lack of standardized global pediatric norms affect intervention planning with children in these regions?

Our 2024 scoping review highlighted the persistent challenges of adapting pediatric neuropsychological tests across Southeast Asian contexts, not just in terms of language, but cultural relevance, educational exposure, and developmental expectations.

Moving forward, a key directive is the co-development of culturally grounded assessment tools, ideally created by clinicians and researchers from within the region. Translation alone isn't enough. We need tests that reflect local learning environments, linguistic structures (like tonal languages, ideographic writing systems), and culturally shaped behaviors, such as response inhibition in high-context cultures. Another crucial step is to build collaborative, cross-national normative databases within Southeast Asia. Given our shared histories and overlapping linguistic and educational systems, it makes sense to develop regional norms instead of working in isolation. This could also benefit diaspora populations globally.

For neuropsychologists in the U.S. serving Asian American children, this gap in standardized global pediatric norms creates real challenges. Many children of Southeast Asian descent are bilingual or multilingual, raised in households with values and communication styles different from mainstream U.S. norms. When we rely on monolingual English-speaking norms or fail to account for these cultural-linguistic differences, there's a serious risk of over-pathologizing or misinterpreting performance.

This doesn't just affect diagnosis, it impacts how we design and implement interventions. If we misunderstand a child's learning trajectory or processing speed due to unfamiliarity with cultural expectations or early language exposure, our interventions may miss the mark. That's why developing more inclusive norms, culturally aware interpretive frameworks, and clinician training on these nuances is essential, not just in Southeast Asia, but also for Asian populations living abroad.

The ultimate goal is a model of pediatric neuropsychology that is global in perspective but locally and culturally informed - whether we're assessing a child in Penang, Phnom Penh, or Pasadena.

RESEARCH HIGHLIGHTS

BY IVY CHO, M.A., JAS CHOK, M.S., & JESSIE LI, PSY.D.

Similarities and Differences in the WAIS-IV Performances in Korean and U.S. Populations

Although many existing studies have compared mathematics and science assessment results between the two populations, comparing performance on intelligence tests in adults between these Korean and U.S. populations have been relatively limited to date. Intelligence scores are understood to be impacted and changed by various factors including socioeconomic development, education, language, and other cultural influences; recent studies suggest that the increase in IQ scores in Koreans can be attributed to recent development in socioeconomic characteristics and quality of education.

To further the understanding of intelligence testing, this study investigated performance on the Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) between South Koreans and U.S. Standardization samples. Due to differences between the age range of the norms between the two groups, the following norm age groups were used for the study: 16-17, 18-19, 20-24, 25-29, 30-34, 35-44, 45, 54, 55-64, 65-69. Results demonstrated that across age groups, the South Korean sample scored lower than the US sample on Similarities, Comprehension, Picture Completion, and the Verbal Comprehension Index. Interestingly, there were performance differences between younger and older adults in the South Korean sample group. Specifically, when compared to their U.S. counterparts, the younger South Korean cohort performed significantly higher on Block Design, Matric Reasoning, Visual Puzzles, Figure Weights, Digit Span, Arithmetic, Letter-Number Sequencing, Symbol Search, and Coding. Moreover, with the exception of Verbal Comprehension, all composite scores were also higher. Comparatively, the older South Korean cohort scored lower on Similarities, Vocabulary, Comprehension, Matrix Reasoning, Visual Puzzles, and Picture Completion. Moreover, Verbal Comprehension and Perceptual Reasoning composite scores were also lower.

PHOTO COURTESY OF PEXELS

These results highlight the importance of taking into consideration changes into socioeconomic developments, education, and cultural differences in information processing, and language characteristics. Lastly, the authors acknowledged that the retrospective and cross-sectional methodology act as a limitation to this study.

Japanese Performance Profile on the WAIS-IV and Purported Cultural Influences

The current study compares the Japanese Wechsler Adult Intelligence Scale-IV scores to the United States WAIS-IV. Various cultural characteristics are understood to influence cognition, including socioeconomic development, education, and health and nutrition. Studies to date have examined IQ scores in Japanese populations, with studies finding improvements in IQ scores over time. These findings suggest that improvements in scores are due to multiple factors including improving socioeconomic status, education, and other aspects of health and nutrition.

RESEARCH HIGHLIGHTS

(CONTINUED)

BY IVY CHO, M.A., JAS CHOK, M.S., & JESSIE LI, PSY.D.

The current study expands upon the existing literature by comparing WAIS-IV scores between Japanese and U.S. samples to examine the impact of culture on intelligence. Specifically,the Japanese WAIS-IV sample was N=1120, with the sample reflecting census data regarding sex and educational attainment. With this, subtest, index, and IQ scores were calculated across age groups. The results from the study found that the Japanese group performed lower than the U.S. group on verbal comprehension subtests, but higher on perceptual reasoning subtests and processing speed. All the scores were correlated with education, except for Block Design, Matrix Reasoning, and Figure Weights. Moreover, there was a correlation between scores and education. The authors suggest several implications from these findings. These implications includes that intellectual functioning should not be based on a single measurement. Moreover, several different factors ranging from socioeconomic developments, education, migration, and nutrition, all seem to impact cognitive performance and functioning. In addition, differences with age range norms over time raised questions about cohort scores differing in a given year. Moreover, differences in performance from the Japanese sample could also be explained by different cultural values in the writing system and values surrounding group orientation. The authors also note several limitations to this study including nonequivalence between tests and the need to continue examining and comparing the impact of culture with other countries with similar cultures to further support cultural explanations. Overall, the authors suggest that these components should be taken into consideration in both test administration and interpretation.

Cultural Considerations in Intelligence Test Adaptations: a Critical Review of the WAIS-IV India and Its U.K. and U.S. Counterparts

Although the Wechsler Adult Intelligence Scale–Fourth Edition (WAIS-IV) is commonly used for intelligence testing, there are limitations in the reliability and validity of utilizing it for non-fluent English speakers with higher education — particularly in diverse countries, such as India, where regions differ widely in language, culture, history, policies, and media. To determine whether India's WAIS-IV was appropriate for its population, the WAIS-IV's administration and scoring manuals from the U.S., U.K., and India were qualitatively examined.

Compared to the U.S. and U.K. versions, the Indian edition was not properly adapted and contained few meaningful changes. Normative sampling was also problematic because Asian Indians were not a distinct category in U.S. and U.K. norms, which classified individuals broadly as "Asians." Moreover, sample selection was disproportionate, as only 200 of the 980 participants used for the India norms represented educational levels below a college degree. Furthermore, much of the data was also normed to urban residents, despite the 2001 Census data demonstrating that just 27.8% of the Indian population lived in urban areas while 72.19% lived in rural regions.

Additionally, the Census data also indicated that the overall literacy rate was 65.38%, with only 5.7% reporting 15 or more years of education. Due to the lack of adaptation and poor sample selection, India's WAIS-IV may not be suitable for most of its population, as it may be more representative of individuals who are fluent in English and highly educated. However, even

RESEARCH HIGHLIGHTS

(CONTINUED)

BY IVY CHO, M.A., JAS CHOK, M.S., & JESSIE LI, PSY.D.

this is uncertain as details for the normative sample in India were unclear and lacked details. The age ranges in the normative samples also differed, with the U.S. and U.K. samples including more participants in the age range of 85–90, whereas the Indian sample contained more individuals between 65 and 85.

Certain subtests, such as Vocabulary, were also found to be unchanged. Overall, despite the differences between the versions of the WAIS-IV, it can be concluded that more consideration is needed to adapt and develop test material and norms for the Indian population to ensure valid assessment across diverse populations.

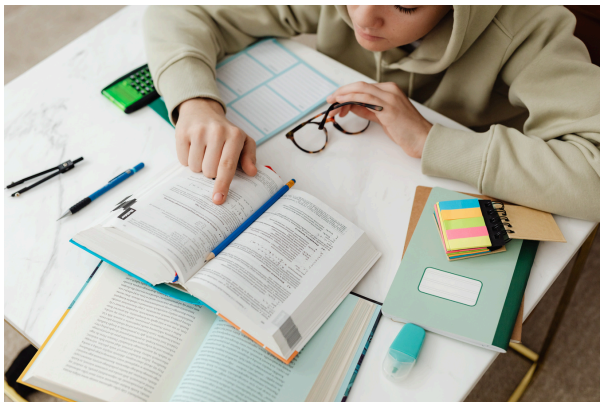
Indonesia WAIS-IV Cultural Research

Indonesia's diversity is evident in the presence of a variety of ethnic groups living and languages spoken across the country. This diversity leads to multiple ways of defining intelligence. Researchers in this study aimed to explore cultural impacts on cognitive performance from various regions in Indonesia on an Indonesian version of the WAIS-IV (WAIS-IV ID), as compared to a U.S. sample.

The WAIS-IV was translated into Bahasa Indonesia. The WAIS-IV ID retained all items from the U.S. WAIS-IV despite possible cultural differences, rearranged items based on difficulty for an Indonesian sample, and was scored using U.S. norms. The sample included 1,745 Indonesian participants ranging between ages 16-69.9 years, and 58% of the sample was recruited from the Java region of Indonesia, with the remainder of the sample grouped into a non-Java (NJ) group.

Results indicated the Java sample performed significantly higher than the NJ sample. This difference could be attributed to higher quality of education in Java and economic status. Education level was not correlated with index scores in the NJ sample, however, there were differences on WMI performance between groups who had 16+ years of education compared to those who had a high school education or less. Researchers suggest this may be due to heterogeneity and sampling bias within the NJ group. Overall, WAIS performance was comparable to the U.S. sample for Indonesians with higher education levels. Notably, the education level of the sample was significantly higher than the general Indonesian population.

Limitations of the study include convenience sampling resulting in a sample not representative of the population and concerns about the cultural validity of the WAIS-IV ID. Given all WAIS-IV items were retained and not adjusted for cultural relevance in the Indonesian version, test developers emphasized the impact



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RESEARCH HIGHLIGHTS

(CONTINUED)

BY IVY CHO, M.A., JAS CHOK, M.S., & JESSIE LI, PSY.D.

of content bias. Researchers encouraged continued exploration of the impact of regional differences on WAIS-IV ID performance and reducing content bias of the WAIS-IV ID.

Revealing Cultural Dynamics in WAIS-IV Performance: A Comparative Analysis of Age Cohorts in Taiwanese and U.S. Populations.

Taiwan has a rich spiritual, educational, and linguistic landscape, shaping their concept of intelligence to include social and moral attributes. Researchers in this study aimed to explore the relationship between culture and cognition across Taiwanese and U.S. age groups using the WAIS-IV.

The sample included a diverse age profile, ranging from age 16 to age 90 in both U.S. and Taiwanese populations. The Taiwanese population was separated into three age cohorts: young (16-34 years old), middle-aged (35-64 years old), and old (65-90 years old). In an effort to improve cultural validity, the Taiwanese adaptation of the WAIS-IV (TW) replaced specific items from the U.S. WAIS-IV (USW) with more culturally appropriate items developed in Taiwan. Both versions included the 10 core subtests. Supplemental subtests included Comprehension, Picture Completion, Figure Weights, Letter-Number Sequencing, and Cancellation, although only two supplemental subtests were used for each participant. Researchers also explored the impact of education between the Taiwan and U.S. samples across age cohorts.

Results indicated significantly lower mean performance for the Taiwanese sample when compared to the U.S. sample on multiple subtests. The Taiwanese sample also obtained a lower performance on VCI scores, however, overall performance on FSIQ, PRI, WMI, and PSI were comparable across both groups of all age ranges. There were also significant differences in performances across Taiwanese age groups when compared to the U.S. sample, specifically superior PSI, WMI, PRI and FSIQ with comparable VCI in younger cohorts, lower VCI but comparable FSIQ and index scores in the middle-aged group, and declines in domains other than visuospatial reasoning and organizational skills in the older cohort. There was also a significant difference in education level across age cohorts in both samples with younger cohorts having higher education levels, and the older Taiwanese cohort having less years of education compared to the U.S. sample. Performance on core subtests were strongly related to education levels between both groups.

Notably, Taiwanese performance across all VCI subtests were significantly lower than the U.S. sample, which researchers attributed to the influence of test adaptation, scoring against U.S. norms, and varied perceptions of intelligence. Researchers emphasized the perception of intelligence in Taiwanese culture to include a holistic approach including social and moral components, extending beyond the traditional Western perception of intelligence as assessed by focusing on cognitive abilities. Research emphasized the need for culturally unbiased assessments to account for these differences.

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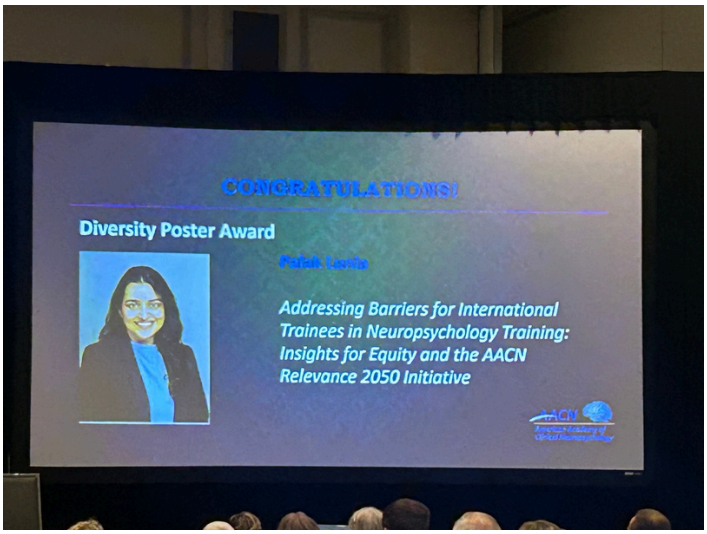

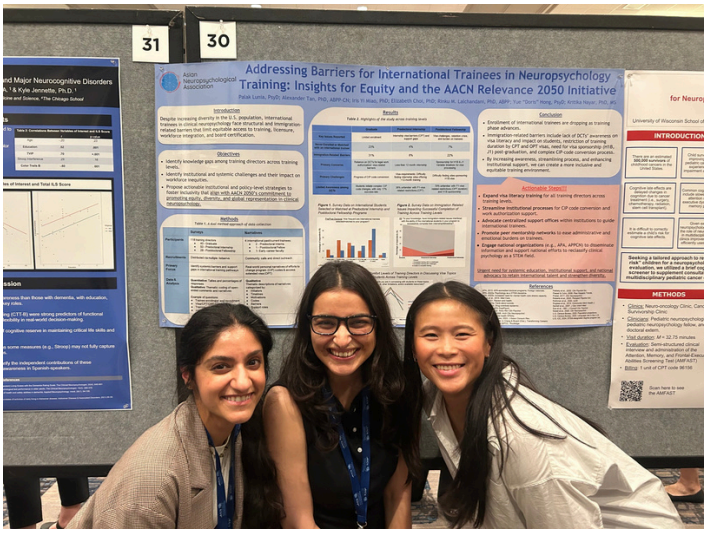

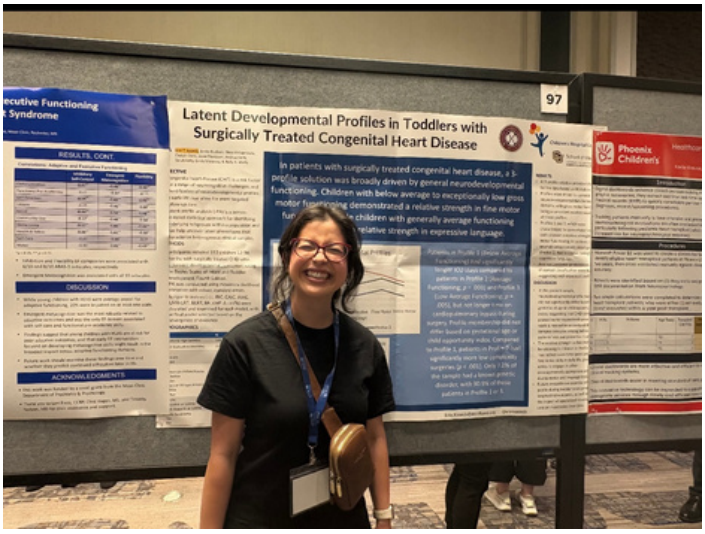

PHOTOS COURTESY OF DR KRITIKA NAYAR, DR ERIN KASEDA, DR NAVYA KAMATH, AND ELMMA KHALID, MS

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