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Developing Understanding through Global Case Studies
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General Issues in the Neuropsychological Assessment of Asian Americans

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11 General Issues in the Neuropsychological Assessment of Asian Americans

Daryl Fujii

Introduction

Asians, which for the purposes of this chapter will refer to East, South, and Southeast Asians, are the most populous “race” in the world. People from 28 Asian countries make up about 55% (4.28 billion) of the world’s population (7.8 billion) as Asia accounts for 8 of the top 20 most populous countries: (1) China—1.4 billion, (2) India—1.38 billion, (5) Pakistan—221 million, (8) Bangladesh—164 million, (11) Japan—126 million, (13) Philippines—109 million, (15) Vietnam—97 million, and (20) Thailand—69 million.1

In addition, there are about 52 million people of Asian descent living in other countries, with India (18 million) and China (11 million) ranking first and third, respectively, for country of origin for migrants.2 Countries with the largest Asian populations include the United States (20.4 million), Canada (6.09 million), Saudi Arabia (6.02 million), United Arab Emirates (5.82 million), Great Britain (4.37 million), France (3.75 million), Australia (3.55 million), and Germany (1.89 million).3

The timelines, circumstances for, and locations of diasporas for each Asian country vary, although the primary reasons for migration are labor, family reunification, and asylum. For example in China, out-migration accelerated in the mid-nineteenth century, which was a time of political and economic upheaval with the Opium Wars and Taiping Rebellion, natural disasters, and population growth. In Vietnam, migration occurred after the end of the war in the 1970s as people fled the communist government and abusive refugee camps. More recently is the massive, government-sponsored, and directed out-migration of Filipino workers who drive the country’s economy by routinely sending money back to family in the Philippines.4

The sheer population numbers would implicate a significant need for neuropsychological services for Asians, with each country facing specific challenges. Indeed, common neurological diseases in Asia include cerebrovascular diseases, headaches, seizure disorder, and Alzheimer’s disease and Parkinson’s disease in geriatric populations, which is very similar to Western countries. Diseases specific to Asian countries include a high number of strokes in younger adults secondary to premature atherosclerosis, relative commonality of neuromyelitis optica and the optic-spinal variant of multiple sclerosis, and a high incidence of sex-linked dystonia-Parkinsonism in the Philippines. Japanese encephalitis, tuberculous meningitis, cysticercosis, rabies, and tetanus are common infectious diseases, while enterovirus-71 encephalitis, dengue, sarcocystosis, and Nipah encephalitis are emerging infections with neurologic involvement.5

Unfortunately, not all Asian countries have neuropsychological services, and there is significant variability in the availability and standards of practice in countries where services exist. For example, neuropsychology is much more developed in countries such as China, Korea, and India,
Asian American Overview

Asian Americans (AAs) are a highly heterogeneous racial group of 20.4 million people that account for about 5.4% of the US population. The US census reports 19 unique ethnicities with the largest 6 groups, Chinese (4,948,000), Indian (3,982,000), Filipino (1,980,000), Korean (1,822,000), and Japanese (1,411,000) accounting for 85% of the population. Other AA ethnic groups include: Pakistani (519,000), Cambodian (330,000), Hmong (299,000), Thai (295,000), Laotian (271,000), Bangladeshi (180,000), Burmese (168,000), Nepalese (140,000), Indonesian (113,000), Sri Lankan (60,000), Malaysian (30,000), Bhutanese (24,000), and Mongolian (21,000).8 Given the numerous countries of origin, it is not surprising that AAs are culturally and linguistically diverse. AAs are also significantly diverse in key demographic variables such as level of education, socio-economic status, percentage foreign-born, and English proficiency.9 Despite the diversity, scholars have argued for a pan-Asian culture and experiences.10

Education/Literacy

Asian countries vary considerably in quantity and quality of education and literacy. Expected years of education range from a high of 16.4 years for South Koreans to a low of 8.5 years for Pakistanis.11 Similar discrepancies are demonstrated on international test scores, such as the Programme for International Student Assessment (PISA), which could be considered a measure of education quality. In 2018, China, South Korea, and Singapore were among the highest-performing countries, while students from Malaysia, Thailand, and the Philippines scored in the bottom third.12 Ranges in literacy rates are also considerable, with Japan (99%) and South Korea (98%) approaching 100%, while India (69%), Bhutan (53%), and Pakistan (55%) fall in the lowest 20% of countries for literacy.13

Although AAs are the highest educated ethnic group within the United States, with 51% having a bachelor’s degree or higher, educational attainment for specific Asian ethnic groups varies considerably. The most educated ethnicities of Indian (72%) and Malaysian (60%) have twice the national average (30%), while the least educated ethnicities are about two times below the national average (Laotian 16%; Bhutanese 9%).9

Implications: (1) As education is one of the strongest predictors of neuropsychological test performance, it is imperative that the neuropsychologist is aware of the AA patient’s educational background, including the quality of education. This understanding is particularly important for first-generation AAs who were educated in their home country. Scores on international standard tests such as PISA,12 Trends in Mathematics and Science Study (TIMSS), and Progress in Reading
and Literacy Study (PIRLS)\textsuperscript{14} can be a proxy for education quality for a country, although not every Asian country participates in testing. For first-generation AAs who are educated in the United States, it is also imperative that the neuropsychologist is aware of school's services for foreign students, such as the English as a Second Language (ESL) Program. (2) It is essential to procure demographically matched norms for test interpretation, as education levels can significantly vary between and within a country. For example, Asian Indians in the United States are highly educated, yet continental India has among the highest illiteracy rate in the world. If these norms are not available, it is recommended that neuropsychologists use the individual comparison method,\textsuperscript{15} which uses premorbid estimates of cognitive functioning as a benchmark to interpret current test scores (for a general strategy to determine premorbid functioning see Fujii\textsuperscript{16}).

**Culture/Acculturation**

In America, the majority of AAs are foreign born (59%), although percentages vary by ethnicity. For example, the vast majority of Bhutanese (92%) and Nepalese (88%) are first-generation American, while only 27% of Japanese and 39% Hmong are foreign born.\textsuperscript{9} Thus it is essential that a neuropsychologist understand the specific culture of an AA's country of origin and their acculturation to Western society to provide competent and meaningful services. Specifically, macrosocietal structures such as a country’s geography, sociopolitical-economic history, population demographics, government, and educational system can provide important clues to determine language(s) spoken, English proficiency or bilingualism, educational opportunities, intellectual functioning on Western tests, and historical events that may impact the relationship between the neuropsychologist and AA patient.\textsuperscript{16} Values, beliefs, worldviews, religions, family structures, and norms for social interactions\textsuperscript{17} can guide approaches for developing rapport, optimizing communication, understanding conceptions of intelligent behavior, and generating meaningful recommendations. Common medical conditions and neurological disorders, attitudes and beliefs regarding health and illness, and common treatments for illnesses\textsuperscript{17} are useful for generating hypotheses about diagnoses and making useful treatment recommendations.

Despite unique differences between Asian countries, there is a general collectivist pan-Asian culture emphasizing interdependency that manifests itself in norms of social conformity and restraint, strongly defined roles, suppression of emotional expression, indirect communication, and family loyalty with a fierce obligation to avoid bringing shame to one's family. These values are influenced by Eastern philosophical traditions such as Hinduism, Buddhism, Taoism, and Confucianism, which stress interdependency of the person with the universe.\textsuperscript{10,18}

Although cultural knowledge is important for developing a contextual understanding of AA patients, level of acculturation defined for neuropsychological purposes as “the similarity of a patient’s culture and experiences to, and adoption of, mainstream culture”\textsuperscript{16} (p. 67) is essential to individualize conceptualization of the patient. Knowledge of a patient’s acculturation will help neuropsychologists titrate the impact of an AA patient’s home culture on presentation and functioning. This information can then guide the evaluation process. Acculturation can be determined through formal assessment such as the Asian American Multidimensional Acculturation Scale,\textsuperscript{19} or clinically based upon characteristics such as age at immigration or generation in the United States, exposure to mainstream culture, or cultural identity.\textsuperscript{20}

Implications: (1) Neuropsychologists need to research an AA patient’s culture and at a minimum informally assess for acculturation prior to the assessment to develop plans for the assessment. To reduce testing biases, neuropsychologists should refer to the American Education Research Association (AERA) Standards for Educational and Psychological Testing (2nd ed.)\textsuperscript{21}
Asian American Overview

and determine how culture can impact the four pillars for fairness in testing: (a) comfort with the testing situation, (b) test bias, (c) accessibility, and (d) validity. A cultural conceptualization can then assist in developing useful recommendations. (2) Asians' collectivist culture has implications for cognition and underlying brain functioning. For example, in comparison to Westerners, Asians engage in more holistic versus detail visual processing focusing on both object and foreground, formulate memories within contexts versus discrete details, and classify objects through experiential relationship-oriented categories.

Language

Unlike ethnically diverse Latinos who generally speak a form of Spanish, each Asian country has its own language. In some countries, such as India and the Philippines, several major languages are spoken with even more regional dialects. For example, India has 22 official languages and over 1599 other languages. Given that 59% of AAs are foreign born, and 68% of AA speak a language other than English at home, language and English proficiency are salient issues for the neuropsychological evaluation process. English proficiency varies widely across Asian ethnic groups with large majorities of Japanese (84%), Filipinos (82%), and Indians (80%) being proficient in English, while ethnicities with large populations of recently arrived immigrants such as Bhutanese (27%) and Burmese (28%) are less proficient. An important factor affecting English proficiency is generation in the United States, as 94% of native-born AAs speak English well versus 55% of foreign-born AAs. Other factors include age at immigration, number of years educated in the U.S., and exposure to English in country of origin.

Implications: (1) Neuropsychologists need to determine the need for interpreter services and test translations prior to assessment. Clinicians should be mindful that not all AA patients will require these services, and conducting the evaluation in English may be appropriate for AAs born in the United States, immigrated at a young age and educated in the United States, or those immigrating from countries where English is a primary language. (2) If it is determined that an interpreter is needed, neuropsychologists need to find trained interpreters and procure appropriately translated tests. Clinicians should be aware of best practices in working with interpreters, and translating tests if none are available. (3) Neuropsychologists should also be versed in the bilingualism literature.

Economics

Another area of high variability is economics. World economic rankings indicate that Asian countries are among both the strongest (Singapore, China, Japan, South Korea) and weakest (Bhutan, Nepal) economies in the world. Even in countries with strong economies, there can be significant discrepancies in income among the people with areas of high poverty, particularly in rural areas. This pattern of significant economic inequality is also present in the United States, where several Asian ethnicities rank among the highest median household incomes (Indians $100,000, Filipinos $80,000, Japanese $74,000), while other ethnic groups such as the Bhutanese (33.3%) and Burmese (35%) have poverty rates that are twice the national average (12.1%).
Implications: (1) Economics has significant implications for understanding the cognitive functioning and test performance of AA patients. On a global level, countries with stronger economies have better educational systems and network infrastructure for access to information. Thus it is not surprising that a country’s economy is correlated (0.59) with performance on academic and Western intelligence tests. One implication is that a country’s economy can be used as a rough indicator to adjust expected performance on neuropsychological tests for patients from AA ethnicities where there are no normative data. (2) On an individual level, poverty has been associated with less stimulating reading environments and stressful, chaotic, traumatic environments, which have been associated with smaller frontal and hippocampal areas that modulate memory and executive functioning.

Communication Style

Communication style refers to the manner in which information is transmitted between people. It not only involves how information is imparted but also what information is appropriate to disclose and to whom. Incongruence in communication style between a neuropsychologist and patient can result in miscommunication, negative perception of the other, and impact rapport. Due to contrasting styles between individualist and collectivist cultures, it is important for neuropsychologists to be familiar with communication styles of AAs. Individualistic cultures communicate more directly with meaning primarily contained in the content of what is said. Thus the onus for communication is on the speaker. By contrast collectivist cultures emphasize relationships, thus communicate more indirectly with a greater emphasis on nonverbals and the absence of content to avoid conflict or offending. The onus for communication is on the listener.

Another significant difference is the meaning of head nodding. For Westerners, nodding one’s head signifies agreement. However, for many Asian societies, head nodding in response to an authority figure, such as a neuropsychologist, means “I am listening to you.” Thus AAs may nod even if disagreeing with or not understanding the clinician. This behavior results from respect, as disagreeing with an authority figure is considered rude.

Another pertinent aspect of communication is idioms of distress, which is the manner that people of a culture express emotional distress. This expression reflects a shared way of experiencing or communicating emotional concerns and may or may not involve specific symptoms or syndromes. Understanding an AA patient’s idiom of distress is not only important for diagnostic purposes but can also facilitate rapport. For Asians, emotional problems are typically demonstrated through somatic symptoms. In addition, due to the stigma of mental illness, Asians tend to delay seeking assistance for mental health or neurological issues until symptoms are severe. Awareness of this tendency is crucial as neuropsychologists can easily underestimate distress from the patient’s self-report due to somatization of emotional problems and low emotional expressiveness.

Implications: (1) Neuropsychologists should be cognizant of AAs’ communication style and be vigilant for indirect or subtle signs of discomfort or distress. (2) AA patients should be given permission to ask questions if they do not understand test instructions or any aspect of the assessment. Check-ins throughout the assessment can reinforce this behavior as some AA cultures acquiesce only after several offers to avoid appearing rude. (3) AAs’ indirect communication style is moderated by generation and acculturation.

Testing Situation: Perception and Goals

According to Greenfield, neuropsychological testing is a Western technology with its values and cultural assumptions inherent in the process. Due to the Western cultural bias, the process can be unfair for people from cultures who are unfamiliar and/or uncomfortable with the testing
situation, or whose behaviors, values, and worldviews are dissimilar to the west. Specifically, biases can impact motivation and test performances. For many AAs who come from countries with good educational systems or are educated in the United States, the testing situation is a familiar one. These AAs are typically motivated to perform well as education is highly valued, and there is pressure to perform well in testing situations. However, AAs are a highly heterogeneous group, and not everyone fits into this stereotypical category. Testing situations can be perceived as stressful and uncomfortable for AAs who have low levels of education or do not speak English well, for example, elderly who were born in countries with poor educational systems. AAs who have historically performed poorly on tests may also experience more discomfort. It can also be stressful if the patient feels the neuropsychologist is asking intrusive questions about their family, or if the evaluation is perceived to be associated with psychiatric issues due to the stigma of mental illness. In addition, perceived microaggressions by the neuropsychologists can negatively impact rapport and test performance.

Implications: (1) Neuropsychologists should be aware of the AA patient’s culture and level of acculturation to develop hypotheses of how they will perceive the testing situation and adapt approaches to address issues and maximize comfort. For example, engaging in small talk, framing the evaluation as a medical versus psychological assessment, or mirroring the less direct eye contact of the AA patient may reduce discomfort. (2) Neuropsychologists can maximize engagement in the assessment by determining the AA’s concerns or goals for the evaluation and then tailoring recommendations toward these goals. To determine what is useful for the patient, the neuropsychologist should (a) probe what is most bothering the patient or how the patient’s purported neurological condition is causing him/her distress, (b) provide a general description of the neuropsychological evaluation, including purpose and types of information it can provide, (c) inform the patient how this information can be useful to understand his/her concerns, and (d) describe how this information can guide recommendations to address the patient’s concerns.

Intelligence: Conception

Estimates of premorbid intelligence are integral for the neuropsychological assessment as it serves as a benchmark for interpreting test scores and comparing current abilities. Despite its anchoring role, the construct is somewhat amorphous as psychologists have not agreed upon a standard definition. Concepts of intelligence become more complicated when examining different cultures. Numerous theorists purport that intelligence is intimately tied to survival and advancement within one’s social and physical environment. Thus, intelligence across cultures will differ contingent upon unique challenges faced in adapting to and problem solving within environments.

For many AAs, intelligent behavior is associated with high academic achievement. Although performance differs by country of origin, as a whole AAs demonstrate stronger academic achievement and score higher on standardized tests than Whites, particularly in science, technology, engineering, and mathematics (STEM). The academic achievement of AAs has been attributed to several social and cultural factors. AAs are more inclined to believe that academic achievement is something that can be developed versus Western beliefs in innate abilities. East Asians are influenced by Confucian ideals of the perfectibility of humans through learning and self-cultivation. Immigration status is another influence as immigrants leave their home country in search of a better life. For many AAs, educational attainment is perceived to be associated with social prestige and upward mobility, particularly for STEM fields. Parents have higher expectations and are highly influential on children due to parenting styles that engender interdependence and collectivism. The importance of motivational factors is illustrated by weak correlations for socio-economic status and academic achievement, particularly for Southeast Asians.
Academic differences are also demonstrated in the school systems of many Asian countries and the United States. In Asian schools, the teacher is a respected authority who is not questioned. Emphasis is on rote learning and mastering a breadth of knowledge that facilitates high achievement on tests. By contrast, in the US, teachers are viewed more as facilitators of learning. Although course attainment is an aspect of learning, there is more emphasis on discussion and cultivation of critical thinking versus knowledge acquisition.50

Implications: (1) When interpreting test data, neuropsychologists should be aware of the general pattern for higher math versus verbal abilities, as well as weaker association between socio-economic status of AA immigrants and academic achievement.

Context of Immigration

Not everyone from a given country who wants to emigrate to the United States is successful. The person must meet eligibility criteria for one of the immigration categories, which includes family reunification, employment, political, and lottery. Access to resources to travel to the United States is also needed. Thus, there is a selection bias of who emigrates. Biases differ per country as each has its own economic, political, and geographic realities. For example, despite being in the bottom third of the world countries for total literacy rate (71.2%),51 Indians who successfully emigrate are the most highly educated (72% bachelor's degree) and have the highest household median income ($100,000) in the United States.8 A related issue is when a person immigrates in relation to the country's immigration history, as there can be several “waves” of immigration associated with different sectors of society. For example, the first wave of Vietnamese immigrants, who arrived shortly prior to the fall of Saigon in 1975, were primarily urban, well-educated business owners or those with ties to the US military personnel. The second wave, known as “the boat people,” were largely less-educated rural farmers or fishermen, who fled to refugee camps to escape worsening political and economic conditions before relocating to a host country during the late 1970s to late 1980s. The third wave are those seeking family reunification.52

Although people of a country generally share the same culture and experiences, there is often significant heterogeneity which can include demographics that are salient for neuropsychologists such as language spoken, education level and quality, occupation, and socio-economic status. Thus, the selection biases of immigration can provide important clues for understanding how the AA patient fits within their own culture of origin. Determining a person's status within her country is a key issue when attempting to estimate premorbid functioning on Western tests when no relevant norms exist for that country.16 A contextual understanding is especially important for AAs who may not present as the prototypical person for that country.

Another important aspect of immigration is the process or journey for the patient. This issue is particularly salient for refugees as many have experienced physical and psychosocial traumas during the immigration process. Experiences can be associated with psychiatric conditions and also neurological considerations for differential diagnoses.52

Implications: Immigration is a salient issue for many AAs as 59% are foreign born, and many more are second generation, thus children of immigrants. Although third-generation citizens are typically English-speaking and acculturated, understanding a family's immigration history can still provide important contextual information for understanding them.

Summary

In summary, AAs are highly diverse people originating from 19 different countries. Each country has a unique culture associated with specific sociopolitical economic histories, and most speak at least one unique language. This chapter provided a cultural framework for appreciating
how culture interfaces with neuropsychological assessment. Due to the heterogeneity in AAs, neuropsychologists should be knowledgeable of the Asian patient’s specific culture to guide approaches for collecting accurate data, provide a context for interpreting data, and generate useful recommendations. The following chapters in this section will describe cultural specifics for Asian Indian, Chinese, Filipino, Japanese, Lhotshampa (Nepali Bhutanese), Pakistani, South Korean, Taiwanese, and Vietnamese Americans.

References


