Cultural Diversity in Neuropsychological Assessment
Developing Understanding through Global Case Studies
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Support with Autonomy

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Section I: Background Information

Terminology and Perspective

I was born in Rio de Janeiro but my family moved a lot around the country as my father worked for the Brazilian Navy. I got my BS in psychology in São Paulo, the largest city in South America. I lived in the United States for almost ten years in order to obtain my master's and doctoral degrees in Rehabilitation Psychology from the University of Wisconsin—Madison. This experience was crucial to making me a better culture-conscious professional. It was during that time that I realized that my Brazilian background gave me a different professional perspective compared to my American and Brazilian colleagues. I had to adapt my future practice to Brazilian culture as some of the procedures I learned in the United States would not be adequate in Brazil. I am currently a psychology professor at a federal university in Curitiba, the capital of the state of Paraná in Southern Brazil. Let me try to explain how this life experience has affected my perspective as a neuropsychologist by presenting some important information about Brazil and Brazilians.

Geography

Brazil is the largest country in South America, spanning 8,514,215 km², bordering the Atlantic Ocean and with a population of over 211 million. Brazil's 26 states and the Federal District are divided into five regions (North, Northeast, Southeast, South, and Center-West), each region with specific characteristics. Due to its continental size, Brazil has six ecosystems: the Amazon Basin (a tropical rain forest in the north); the Pantanal (a tropical wetland in the west); the Cerrado (a savanna system that covers the center of the country); the Caatinga (a scrubland region in the northeast); the Atlantic Forest that extends along the entire coast; and the Pampas (lowland plains in the south). The country’s diverse ecosystems contributed to important economic and demographic differences among its regions. Ninety percent of Brazil presents a tropical climate.

The history of population settlement also varied widely among regions. The North and the Center-West have lower population density compared to the other parts of the country and farming is the major economic activity. In 1960, the Brazilian federal government moved to a planned city called Brasilia. This shift of the decision-making center to the country’s central region increased the development of this part of Brazil. The Northeast, though it was historically one of the first areas to be colonized, presents the lowest living standards and human development index compared to the rest of the country. The Southeast has a dense urban network with high levels of industrial activities and contains the largest cities in the country, such as Rio de Janeiro and São Paulo. The South also has a large population density and enjoys relatively high living standards.

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In sum, regional differences impact the cultural, economic, and social environment, and a range of ways of life can be observed among Brazilians as a result.

History and Language

Brazil was a Portuguese colony for several centuries and independence was achieved in 1822. It is the only Latin American country where Portuguese is spoken and considered the official language. However, we have states with co-official languages that are taught at some public schools such as in the state of Amazonas, where several indigenous traditions are observed. Brazilians use Portuguese for common communication, but bilingualism is common in certain regions where indigenous populations and immigrants are settled. The school system (private and public) teaches Portuguese in all levels of education and English or Spanish as a second language in most high schools. Brazil’s economic history was based on agriculture (sugarcane and coffee, mainly) and cattle farming, with slavery being abolished only in 1888. Structural transformations began in the 1930s with political and economic changes leading to the industrialization of the southern regions. Racial issues related to indigenous groups and descendants of African slaves remain an important struggle today.

Immigration and Relocation

Brazil has a long history of immigration, especially from Europe, the Middle East, and Japan. Brazil has foreign-born people legally living in its territory from across all continents and immigration from neighboring countries is frequent. Therefore, Brazil is a very ethnically diverse country, with cultural influences from all over the world.

Since the severe economic crisis of the 1980s, Brazilians have initiated an emigration flow to the United States, Paraguay, Japan, and European countries that previously had large numbers of immigrants settling in Brazil, such as Portugal, Spain, and Italy. Brazilians differ from other Latin American immigrants as they tend to present a higher level of education when they move abroad. In the United States, the most frequent destination, cities like Boston and Atlanta have a large Brazilian community. Paraguay is the second most frequent destination, as this country offers several incentives for farmers to immigrate. Japan is another popular country, especially for Japanese descendants up to third generation, who can get a working visa according to this country’s law. Moreover, several European countries also permit children and grandchildren of past immigrants to obtain passports. Many Brazilian descendants of European immigrants are allowed to reside and work in such countries and in the European Union generally.

People

Brazilians are considered hospitable and friendly people who approach life in a positive way and with a sense of humor. Family life is a major aspect of our culture. It is very common to keep close contact with one’s extended family and social gatherings are frequent among families. Most Brazilians work 45 hours a week and, if regularly employed, they have 30 days of paid vacation. As we have a large coast, family leisure time in coastal cities and communities usually is related to beach sports and activities. Families living in small cities away from the coast enjoy fishing in our several rivers, hiking, and picnics in the park. Soccer is the greatest Brazilian passion, regardless of social class and educational level. Brazilians celebrate many traditional dates, most of them linked to Catholic traditions. The most well-known celebration is Carnival, a popular holiday with street parties, costumes, and songs. Christmas and New Year’s Eve are other occasions largely celebrated by Brazilians.
Communication

Brazilians, in general, have an informal communication style. The use of first names to refer to people socially, including in work environments, is frequent. Most Brazilians include non-verbal gestures and facial expressions to enhance or focus on a specific part of the content communicated. Therefore, observing how the Brazilian client communicates and not only what is said can be an important source of information. Communication within family and friends usually includes affectionate nicknames and some body contact. So, it is not uncommon to observe Brazilians hugging and kissing on the cheek when greeting. Gender boundaries vary considerably according to social and educational background. Handshaking is common in a professional environment, especially in the initial contact. After the COVID-19 pandemic, this practice might become more restricted but the average Brazilian enjoys social contact and physical proximity as a demonstration of affection and friendship.

There are some remarkable generational differences concerning professional and public communication. Brazilians over 45 years of age tend to be more formal, respectful, and indirect when communicating with authority figures (boss, medical staff, and teachers). Sometimes to avoid confrontation, they would not answer with a “no” as it could be interpreted as harsh and unpolite, so Brazilians would prefer more vague responses (e.g., “I am not sure…”). However, young generations from urban environments can show a more direct communication style and not adopt formal titles (e.g., Dr., Sir/Madam, Mr./Mrs). Neither age group would argue with a health professional nor seek additional understanding about a recommendation or prescription and, after the consultation, they would simply not follow up on these recommendations. To facilitate that Brazilian clients be more open about their disagreements and concerns, I ask them what they understood from the conversation and what they think about my ideas. This can open a more direct conversation as I show I am concerned about the client’s opinion and understanding.

Portuguese spoken in Brazil has different accents, vocabulary, and expressions compared to the language spoken in Portugal or other former colonies. When using an interpreter or translator, it would be better to make sure this issue is clear.

Education

Brazil has an extensive public education system and it is mandatory to attend school until the child is 17 years old, though this is not regularly reinforced. Dropout rates tend to rise during high school. In 2019, it was estimated that 46.6% of people 25 years old and over had completed middle school, 27.4% had finished high school and only 17.4% graduated from a university. Most Brazilian immigrants have at least high school degrees, but it is important to investigate not only the number of years in formal education but also if it was accomplished in public or private schools.

The United Nations’ 2019 Human Development report indicated that in 2018, the country’s expected years of schooling was 15.4 and the mean years of schooling was 7.8 years. As neuropsychological assessment tests require that the educational level be considered while choosing an adequate test battery, clinical neuropsychology practice within the public health and educational systems tends to use instruments that require lower educational levels when compared to the instruments available to use in private practice.

There is a considerable qualitative difference between the public and private school systems in Brazil. When considering basic education up to high school levels, private schools are thought to offer better education standards, but when analyzing higher education, public universities (provided free of charge by the federation or states) generally offer better conditions. The Brazilian federal government organizes every year a nationwide exam, called ENEM, for high school graduates interested in entering university programs. Every university has its own selection process but all of them use
the ENEM scores somehow. Though Brazilians value education very much and the job market pays better wages for people who graduated, higher education is pursued mainly by the higher-income classes and not easily accessed by low-income students. Over the past decade, a few “affirmative action” educational policies have been implemented to address this issue and facilitate the inclusion of different students (e.g., racial minorities and lower socio-economic classes) at universities.

Frequently, Brazilian immigrants might give up their previous careers and accept any job available when abroad, expecting to change to better jobs later, but such change seldom occurs. Also, some Brazilians plan to spend a few years abroad and then return to Brazil to open their own business. It would be important to investigate the acculturation process and the initial plan of clients, as the emotional consequences and the changes in the socio-economic status can impact the neuropsychological intervention.

**Literacy**

In 2019, 6.6% (about 11 million) Brazilians 15 years old or more were illiterate and in the northeast region, these rates were even higher (13.9%).\(^3\) Poverty and illiteracy in the northern part of Brazil are systemic in rural areas and represent a challenge to different political projects. Several adult education programs have been introduced in the public system. In urban areas, illiterate people participate in the country’s large informal economy, finding jobs linked to recycling different materials, domestic work, and selling trinkets on the streets.

Since the beginning of the century, the government has implemented a welfare plan to help families with children of school age: each qualifying family receives an amount for each child registered in the school system. This program also has courses and projects to improve parents’ professional qualifications.

One important challenge neuropsychologists face in Brazil is to design suitable assessments for this group, as most standard psychological instruments require some basic reading skills. Moreover, due to disparities in formal education levels among states, just considering the number of years of formal education is not enough to identify functional illiterate groups. Especially when working within the public education and health systems, we have to screen literacy skills before planning assessment. A helpful way to identify the actual literacy level would be to ask about reading and writing habits, investigating if the client reads the news, when was the last time a magazine or book was read, and how often the person had to write or read (e.g., a note, a message, a text for work).

Technology literacy or the individual’s ability to assess, acquire, and communicate information in a fully digital environment is one potential issue after the pandemic outbreak. Brazilian society is relying more and more on technology. Banks, stores, and the government are investing in digital processes. Brazil has a huge number of mobile phones throughout all social classes. But formal education has not introduced this topic as part of the curriculum in public schools, which leads to a struggle to access reliable ways to learn how to use different technologies. This situation limits access to social participation when considering services, information, and opportunities. Moreover, regarding Brazil’s size and the long distances, one has to cover to find health and educational services, telemedicine, and remote education have been an issue even before the COVID-19 pandemic crisis, but these initiatives are still finding a lack of infrastructure (such as internet coverage) that would allow them to reach all regions.

**Socio-Economic Status**

Brazil’s economy has been among the ten largest in the world since the 1990s and it is first in Latin America according to the World Monetary Fund. Brazil has a strong agricultural sector
and a growing industry. However, the COVID-19 pandemic represented an enormous challenge to the Brazilian economy as it was still recovering from the 2015/2016 recession. The health policy required to deal with the pandemic and the decline in the external demand of trade partners showed a record contraction. The government has adopted emergency social assistance to protect vulnerable groups, but the impact of lower tax revenues and rise in government expenses weakened the economy and increased the primary deficit. In 2020, the unemployment rate reached the highest rate in the last few years. Currently, the economy is slowly recovering but the services sector, which traditionally has a great number of workers, remains in recession.

In the past 40 years, the Brazilian economy has developed considerably. However, inequalities are still observed. There is still a significant economic gap between northern and southern regions. Inequality in human development is not only about disparities in income and wealth. According to the United Nations' 2019 Human Development report, Brazil's Human Development Index (HDI) value for 2018 was 0.76. This number puts the country in the high human development category by positioning it at 79 out of 189 countries and territories considered in the report. The HDI is considered a measure for evaluating progress in three basic dimensions of human development: a long and healthy life, access to knowledge, and a decent standard of living.

The disparities between rich and poor have increased during the pandemic. We have many people living in slums, both in small and large communities. Sanitation levels are extremely low in the North and Northeast regions. And the Sistema Único de Saúde (SUS), our universal health system, cannot provide efficient basic preventive medical attention to more isolated rural areas in these regions. However, important goals were achieved in the 20th century: vaccination policies were successfully implemented and several diseases were eradicated, infants' mortality rates decreased considerably, and HIV treatment and control policies showed high efficacy.

The public school system provides free meals for all students, but such support might not be enough to prevent malnutrition in preschool and school-aged children. The Brazilian diet is based on rice, beans, and meat or fish (for people who live near the coast or by a river). The investigation of dietary conditions along child development might be an important issue to cover with clients as malnutrition or unhealthy diets can contribute to hypertension and diabetes.

When working with Brazilian clients, regardless of their age, I always investigate their place of birth (country region, rural/urban, etc.), access to the public medical system during childhood, living conditions, and diet. These factors may have affected neurological development, general mental and physical health, and cognitive reserve in different ways. For example, several Brazilians decided to immigrate due to the increasing urban violence in the major cities, growing up in an unsafe environment and having family and friends injured or killed in this type of conflict might influence copying skills and emotional well-being conditions.

Values and Customs

Brazilian culture is diverse and rich in many aspects, but the dominant values are based on Western Christian values and customs (e.g., respect, hospitality, generosity, peace, liberalism, social pluralism, and rationality) due to the influence of European colonization. Particularly, the importance of family support and relationships through different stages of life can reflect on how a successful intervention should be designed. Protocols to include families during assessment and rehabilitation are needed as families usually have a crucial role in clients’ quality of life. Regardless of the client’s age (children and adults, equally), families should be integrated into as many phases of the intervention as possible. Family psychoeducation is an essential part of the process as it can prevent further social isolation and decrease misconceptions about clients’ potentials and limitations. I adopt a “Negotiation Model” that proposes families should learn to adopt a partnership role
with the clinician and feel empowered to actively participate in the decision-making process of the treatment and in electing priorities.

Brazilians might offer small gifts to the medical staff to show appreciation and gratitude and it could be considered snobbish not to accept. Especially if the clinician assists the client over a long period of time, such gifts are frequently given on special dates, for example, on Christmas and Easter.

Another issue that could be relevant is the meaning the client and/or the family give to the neuropsychological deficits or disease. The interpretations they create are based on their values (religious, social, and ethical) and usually impact, positively or negatively, the rehabilitation process, so it would be helpful to inquire about this issue. For example, families can interpret a patient’s apathy, a well-known sequelae of brain injury, as laziness or lack of interest.

Understanding the different family structures and roles is also helpful. It is not uncommon that the traditional family structure (mother, father, and children) is not present in the Brazilian client’s everyday routine. Grandparents, uncles and aunts, cousins or stepparents and siblings can live in the same house. Particularly when the client has immigrated, different social bonds can be built (close friendships and neighbors) and greatly influence the implementation of rehabilitation strategies and procedures in the client’s routine, both by enhancing such interventions or sabotaging them. Sometimes the key agents to be included in the intervention planning are not relatives. Therefore, always ask about significant others and people that the patient trusts and don’t assume that relatives are the best people to be included in the intervention plan.

As in many other cultures, Brazilians tend to have a different approach to time than people from the United States and the United Kingdom. This might surface during the assessment, as timed tests and activities are viewed as anxiety-provoking and can lead to lower scores. Brazilian culture does not emphasize quick performance as much as precision. At school or at work, delivering tasks quickly is not always a priority. Arriving early in a meeting or appointment can be seen as anxiety, while a ten-minute delay is not something frequently reproachable. Use timed activities only after a good rapport has been established and explain why it would be necessary to study how the client’s performance is affected by time restrictions.

**Gender and Sexuality**

Brazil still is mainly a patriarchal society. Gender roles within families tend to reveal that an adult man is responsible for providing economically for the family, while the woman is the main caretaker. Currently, however, women are getting more years of education and better work positions, several media campaigns have raised the topic of gender equality of rights and opportunities. A few social policies and nongovernmental agencies have promoted some changes in the attitudes, but we have a long way to achieve effective change.

Recently, the Brazilian LGBTQ+ community has made several advances such as same-sex marriage and the inclusion of medical procedures to address specific needs of this group as part of the public health system. Additionally, affirmative actions were implemented in the legislative and justice systems. Political changes and social tolerance also vary greatly across Brazil and depending on families’ values and attitudes.

Brazilians tend to display behaviors showing affection and physical connection in public, especially young couples. Sex education is taught in some high schools as a means to prevent discrimination and bullying toward LGBTQ+, sexually transmitted diseases, and adolescent pregnancy. Currently, however, there has been a political movement to review this topic at public schools.

People with several neurological and psychiatric conditions are at risk of having their sexual life disrupted. As a clinical neuropsychologist, I include questions about possible relationship conflicts and sexual life during the initial interview, as this issue directly interferes with quality
of life. If I notice that the person is shy to answer the questions, I explain the importance of the rehabilitation plan to understand these aspects but always leave the option to talk about it on a later occasion.

**Spirituality and Religion**

Religion has a major role in Brazilian history as the Catholic Church actively contributed to political, educational, and social relations since colonial times. Brazil has the largest Catholic population in Latin America and over 80% of the population follows Christian traditions. However, centuries of slavery in Brazil promoted the expansion of African-based religions as part of several states' traditions. Today, they influence behavior, gastronomy, celebrations, and values, and reveal the common religious syncretism among Brazilians.

As Brazil has immigrants from several ethnic backgrounds in different regions, other religions are found depending on where you live. Nevertheless, Brazil has no recent history of large-scale conflicts triggered by religion and as it is illegal to discriminate, people of different religions tend to live together in peace.

The client’s religious community might occupy the role of a support system and facilitate social interactions. As social isolation and anxiety are so often found in patients and represent barriers to rehabilitation and quality of life, the clinician should pay close attention to the religious background. The religious community might be a safe environment for building social skills and finding social activities. When adapting to a foreign country, immigrants might find in their religious community networking conditions that improve their acculturation process and, in these cases, including religious activities in the rehabilitation plan or inviting religious leaders to participate in the educational program might be an effective action.

**Acculturation and Systemic Barriers**

As we consider Brazilian culture and the experience of Brazilian immigration to different countries around the world, it is important to point out that adaptation to the new country is a long-term process that is not limited to objective variables such as speaking a new language correctly, acquiring all the legal papers, finding a job and rebuilding a financial history. This important life transition encompasses nuances of the relation between the native and the host country that might be a barrier for acculturation such as perceived discrimination, cultural identity, intercultural strategies, and emotional coping style. Moreover, immigration often leads to significant changes within family systems, values, and life goals.

Brazilians can be perceived differently around the world; some countries might emphasize the Brazilian festive and extroverted cultural aspects, others might consider the soccer traditions and love for outdoor sports and leisure, and others might focus on the socio-economical and political difficulties in our country often shown by the media. It is crucial that the clinician realize what is their own conception of the Brazilian and consider how it might affect the therapeutic alliance.

I suggest that the clinician first understand the reasons that led to the decision to migrate, what steps were taken to organize the change of countries, the expectations and goals involved in the initial adaptation to the new country, the first experiences and negotiations needed to adapt, and networking strategies. This understanding by itself can give crucial information on the client’s social (coworkers, friends, and family), cognitive (organization, planning, self-monitoring, and flexibility), and emotional (anger and frustration, anxiety, depression, and loneliness) profiles. There are some intervention models such as the Holistic Rehabilitation Model and the Ecological Assessment Principles that facilitate the exploration of acculturation aspects and cultural identity.
**Health Status**

Chronic non-transmissible diseases are responsible for 70% of deaths in Brazil. High cholesterol, hypertension, diabetes, Parkinson's disease, and Alzheimer's disease are among the most frequent causes of death in Brazil. Brazil Public Health System created a program to distribute medication to control diabetes and hypertension free of charge that has succeeded in decreasing hospitalizations and improving the quality of life of low-income elderly people. Since the beginning of this century, Brazil began to prepare new health policies to address the aging of the population with hospitals and preventive programs specifically for people 60 years old and above.

A large number of adolescents' and young adults' deaths in Brazil are related to interpersonal violence and motor vehicle accidents (MVAs). Traumatic brain injuries due to these growing problems are frequently found in this group. Only recently, a protocol was published by the ministry of health with medical guidelines and a registration system to build a database. This fact might improve the epidemiological data in Brazil, and consequently, influence more efficient health policies. Different aspects of urban violence in large Brazilian cities have become a public health problem difficult to solve as it involves several variables.

Brazil has a large road system around the country as well as a considerable number of motor vehicles. An alarming number of MVAs with drivers and pedestrians being injured every year is observed. As in other countries, improvements in emergency medical procedures have increased the survival rates of patients after traumatic brain injury. After hospitalization, however, there is a paucity of community services to follow these patients needing assistance to return to their previous activities such as work and school. Usually, such rehabilitation services are found only in the private sector in Brazil or at public university hospitals in one of the country’s major cities.

**Mental Health Views**

Since the end of the 20th century, mental health public services in Brazil have gradually turned to a community-based approach with small ambulatory units with multi-disciplinary professional staff where patients can have a variety of services including brief psychotherapy and support groups, but a neuropsychologist seldom is part of the team. Mental health services are still scarce and expensive in general and frequently, when patients seek out psychological or psychiatric services, they are already in severe mental distress.

There is a considerable number of “alternative” mental health services provided by people with exoteric traditions and little training, if any. It is almost impossible to restrict this type of services as some of them are deeply linked to cultural traditions and religious beliefs.

Professional associations and certification boards every year design campaigns to disseminate information about important mental health issues like suicide, anxiety, and drug abuse. However, their impact on the general population is difficult to measure. One important issue that the federal health system has consistently tried to solve is rampant self-medication, currently pharmacies have designed a more efficient control over sales of drugs, including psychoactive drugs, and prescriptions are demanded more consistently. “Alternative” medicine and self-medication are so common in Brazil; I explore this topic systematically with clients to understand how they view them and what they have already tried doing before to cope with reported symptoms.

**Approach to Neuropsychological Evaluations**

Brazilian neuropsychology started in clinical settings such as university hospitals and research laboratories in the 1970s. Several fields contributed to spreading the knowledge of this discipline, but only a few formal training programs existed until the beginning of this century in Brazil. Only
in 2004, a national psychology association responsible for giving licenses needed for professional practice recognized neuropsychology as a specialized service in psychology, and only a few professionals have proper training in clinical neuropsychology in Brazil. There still is a paucity of professional training programs. Because such training requires a long period of studies, supervised practice, and more financial resources, the number of qualified neuropsychologists is insufficient.

The national health system does not regularly offer neuropsychological services and only the specialized (neurology and psychiatric) private clinics and hospitals might have neuropsychologists as part of their staff. Usually, when the client is referred to a neuropsychological evaluation, an explanation about the aims and the procedures of such evaluation can improve participation and motivate clients as they expect to have feedback by the end of the process.

Lately, several cognitive assessment and training tools using different equipment and technology have been translated and published in Brazil; nevertheless, many of these tools have not been properly culturally adapted and investigated in their psychometric characteristics and efficacy in our cultural context. So before using any electronic tool, it would be advised to make sure the clients use that type of technology in their daily life.

Psychologists have to observe some restrictions while using neuropsychological testing as the professional has to choose from a list of certified tests. This online list, called SATEPSI, has been published and updated by the national professional association according to the test’s psychometric characteristics. This was an initiative to facilitate that psychologists use only validated and normed tests and, consequently, improve assessment interpretations and ethical practice. Several research endeavors to develop and to adapt neuropsychological tests and activities appropriate to Brazilian culture and to develop normative data to guide interpretation have been published, but there are still limited tests from which to choose and sometimes we have to rely on clinical judgment only.

**Section II: Case Study — “How Can I Say Thanks for My Family Support While Telling Them Goodbye?”**

The following case is an example of a 31-year-old single man who sought services after a traumatic brain injury (TBI) following a motorcycle accident and received services from both private practices and a public university service. The client’s family sought neuropsychological assistance in order to outline the client’s cognitive and emotional functioning for the purpose of starting a rehabilitation program one year after the accident. After initial hospitalization, Mr. Silva (pseudonym) was treated at the Center for Rehabilitation and Interdisciplinary Studies of the Federal University of Paraná (CEREI-UFPR). Treatment consisted of participation in cognitive rehabilitation groups, psychotherapy, and systematic family orientations. Other health services such as occupational therapy, physical education, and neurology were received from private practice elsewhere. Cognitive rehabilitation focused on the functions of attention, perception, memory, and executive function, and intended to introduce compensatory strategies in the client’s daily life. In the initial interview, the patient’s mother and one of his sisters, who was a physician, were the major source of information about the accident and the long hospitalization process that followed. The following information was gathered during the intake assessment interviews both with family members and the patient as he presented a severe memory problem at that time.

**Behavioral Observations**

Mr. Silva arrived on time for all assessment sessions and was very cooperative. He showed a high level of dependency on his family while answering the questions and trying to remember major life facts such as the name of his last employer, his current address, and details about his routine.
At times, he would present superficial awareness of his dependence and frustration by often complaining about his cognitive limitations and self-deprecating about his performance. He was always very polite and we built good rapport from the beginning. His major expectation was to return to work in the same position as before the accident. I explained how the rehabilitation process works and the aim of the initial neuropsychological assessment as well as how difficult it would be to make predictions during its initial stages as there were many factors involved in the process. It is very important to prepare the patient for the usually long rehabilitation period while acknowledging his expectations and goals as sources of motivation. During the testing sessions, he reported that he was used to participating in evaluations and testing and very knowledgeable in computerized and mobile phone resources. We had to keep assessment sessions shorter than usual as he reported mental fatigue after 40 minutes of cognitive testing. He was very engaged with the tasks and seemed to like the challenge offered by some of them, particularly the executive functions instruments.

Main Concerns

Initially, Mr. Silva only had a vague idea of the major changes in his life since his TBI and could not give examples of the activities in which he had difficulties or the strategies he had developed to deal with such difficulties. At that point, I considered the family’s concerns as starting points to investigate the client’s thoughts and emotions toward them. The family reported several attentional and memory deficits, some communication difficulties, and perseverative behaviors. I informally would ask Mr. Silva about a situation reported by his mother, for example, and waited to have his impressions. It soon became clear that he did not realize how deeply affected his mother, his major caregiver, was by his current limitations. I hypothesized that the family members actively tried to minimize his difficulties to spare him of further distress. This is a common reaction of Brazilian families and, though in the first months just after a brain injury, it could be a good strategy to diminish patient’s anxiety, as the recovery progresses, a patient’s awareness of his/her neuropsychological problems enhances rehabilitation program participation. Therefore, I began periodical family sessions to guide when and how these feedback could be provided to Mr. Silva.

Daily Functioning

Mr. Silva has lived independently in his own apartment since graduation. In Brazilian families, it is common that children just leave their parents’ house after getting married. Brazilian men seldom know basic house chores, such as cooking and cleaning, independently of social class. Mr. Silva, before the accident, used to live alone and did all housekeeping tasks, however, after the accident, he moved to his parents’ apartment. Both parents would “take care of everything”: from getting him a glass of water to helping with his financial organization. During family orientation, the need to let the client try to do daily activities and regain some organizational skills with gradual independence was introduced as a first goal. A workbook teaching how to introduce and guide step-by-step house chores and a plan were developed with the assistance of an occupational therapist and were given to the client and his family.

Health History

Mr. Silva was a young and healthy man who did not smoke nor reported any health concern before the motorcycle accident. He sustained a severe left frontotemporal injury, a diffuse axonal injury was also diagnosed, and the emergency rescue reported a score of 3/15 at the Glasgow Coma Scale. The accident happened when he was working abroad. He was hospitalized for two months and presented with post-traumatic amnesia when he awoke from coma. His family in Brazil was
informed about the accident and, immediately, traveled to the foreign country. His parents stayed the entire hospitalization time with him and when the patient was well enough to travel, they moved back to Brazil for the long-term treatment.

His accident happened when he was going to work and he was sober. In Brazil, the majority of MVAs are related to alcohol and drug abuse, so it is always advisable to include questions about this topic to understand precisely what the client’s habits are. Mr. Silva did report frequently drinking at weekend parties. At the time of the initial interviews, his friends would invite him to go out, but as he knew he could not drink, he preferred to stay home.

During the initial interview, he reported sleeping eight to nine hours daily. After TBI, he had one convulsive epileptic episode and anti-convulsant medication was introduced. Moreover, he had visual problems that led to double vision and some reduced acuity which were surgically corrected after the first year in CEREI. Visual limitations should be considered when choosing assessment tools. He had a personal trainer to guide regular physical activities.

Work and Educational History

Mr. Silva reported an impeccable educational history: he was always one of the best students in his class and entered university without difficulties. He had a master’s degree in science when he got his first job. He learned English as a second language during his teenage years, which allowed him to work for multinational corporations. Mr. Silva was a successful professional in his field and had worked in several foreign countries. At the time of the accident, he was working in an English-speaking country for two years. He was a team supervisor and his position required field and administrative tasks.

Language Proficiency

Portuguese was Mr. Silva’s native language, but he was fluent in English. As part of his work, he wrote reports and documents in English frequently. During one of the final sessions of the assessment, I tried to have an English conversation with Mr. Silva, and he seemed able to understand part of the instructions but did not respond orally to any question. This suggested that only some aspects of these previously fluent language skills remained.

On the other hand, according to Mr. Silva’s family, he was still able to speak, to write, and to read Portuguese correctly. I observed that he had problems maintaining a dialog when the topic required to deepen the information and build arguments. For example, I asked him to describe any of his work routines or even to give his opinion about a well-discussed topic such as minimum wages, but he could not elaborate even after reading a text about these topics. Moreover, there were times that he had difficulties answering objective questions, attending to details, and being tangential.

Brazil does not have standardized tests in several specific areas, including certain language domains. The clinician should often create tasks and questions linked to the client’s history and interests to check skills and use clinical observation skills. Due to his pre-morbid high educational level and foreign language knowledge, I included a series of activities to address Portuguese languages’ abilities (a diary, read news sites daily and write a summary).

Cultural History

Mr. Silva was the family’s only male child; he had two adult married sisters and had small children. At the time of the accident, he was living in a foreign country, and the family arranged for
Mr. Silva to return home to his native city in the south of Brazil as soon as he was able to travel. His sister, who was a physician, helped the communication with hospital staff and the treatment decision-making process.

His family was the second generation of Italian immigrants and his parents valued education and expected all children to graduate from a university. They were a middle-class family; his father worked for the government and his mother a homemaker. His father and sisters helped with specific treatment recommendations, but as it is common in Brazil, his mother was his main caregiver. His mother recognized that sometimes she could not avoid treating him as a teenager, and frequently, she would struggle to find a balance between taking care of her own needs and her son's.

While working abroad, Mr. Silva would return to Brazil three to four times a year on special occasions but he reported that his family did not know much about his daily life. When he visited, he would go out with old friends to celebrate but he considered himself a tourist in his own country. After the MVA, he returned to live with his parents. They re-established a similar relationship to the one they had when Mr. Silva was still at the university. His parents would control and have strict rules. Mr. Silva was grateful for his parents' assistance and dedication but had difficulties creating clear boundaries and showing responsibility, partly because he was afraid to offend his parents by gaining his independence again and partly because he was insecure about his actual abilities and autonomy. This is a common situation within Brazilian families as they feel obligated to participate in the rehabilitation process and, seldom, hire a professional caretaker. Patients as well as family members often find themselves in a challenging predicament of knowing when and how to gradually reduce supports and to facilitate a patient's independence again. Neuropsychologists could have a primary role in pointing out these moments of dependency and assist in establishing greater independence and in generating social participation without exposing the patient to embarrassing situations.

**Emotional Functioning**

According to his parents, as soon as Mr. Silva started to recover some level of self-awareness about his physical and cognitive functioning, he began to have outbursts where he "reacted irritably and with tantrums." Emotional turbulence is frequently reported, and anxiety and depressive symptoms as well as anger and aggressive outbursts are common. As Brazilians are used to showing their feelings freely, family and friends are tolerant toward these feelings initially and, usually, very reluctant to search for psychological or psychiatric assistance. In the present case, as soon as the client showed better awareness of his emotional instability while in CEREI, he began a psychotherapeutic intervention which included anger management strategies. In terms of personality after injury, Mr. Silva usually presented himself as a friendly and funny person, always striving to be as cordial and appropriate as possible, a characteristic observed through his contact and interaction with staff and patients working group.

**Preliminary Formulation**

In summary, initial sessions with family and the client indicated that the client had a severe TBI with many cognitive, emotional, and social consequences. Cognitively, the major complaints related to attentional and memory skills. Emotionally, the family would recognize some anger outbursts, lower self-esteem issues, and I also observed certain dependency issues facilitated by the family relations. Socially, Mr. Silva had an extensive social network with family and friends willing to participate in his recovery, but he had difficulty to sharing his needs and limitations and the necessary changes after TBI.
Ana Paula Almeida de Pereira

Test and Norm Selection

I adopt an ecological assessment approach that recommends the evaluation of the client's behavior and skills in different contexts and always includes the perspectives of significant others. So besides extensive interviews with the client and his family, I gave them questionnaires about the client's cognitive and emotional aspects to be filled and discussed during interviews. The test battery consisted of tests adapted and standardized to Brazilian Portuguese. I administered the following tests:

1. WAIS III—Escala de Inteligência Wechsler para Adultos.  
2. Rey Auditory Verbal Learning Test.  
3. Rey Complex Figure Test.  
4. Trail Making Test.  
5. Five Digits Test  
6. Verbal Fluency Test.  
7. Category Fluency Test.  
8. Attention Psychological Battery—Bateria Psicológica da Atenção—BPA.  

Test Results and Impressions

The data presented below are derived from clinical observation during consultations, interviews with the client’s mother, main caregiver, a battery of neuropsychological tests and questionnaires. The client was cooperative during all the evaluation sessions and seemed committed to carrying out the tasks presented. Mr. Silva has an intellectual level within the average range when compared to his age group. On measures of attention (selective, sustained, alternating, and divided), he presented scores below two standard deviations according to Brazilian norms. This score indicated that the client had severe difficulties performing attentional tasks. In a visual perception task, the client presented adequate performance both in visual scanning and in the formation of gestalts. Visual and verbal memory and learning were significantly reduced. In visual memory tasks, he was able to retain about 50% of the relevant details of a figure after a delay. On a verbal memory test, the client retained 10% of the information presented verbally after a long-term delay. The client required several repetitions to improve learning and distracting stimuli interfered considerably with its performance.

It was observed that working memory performance was within the average range. Information processing speed and fine motor coordination were deficient. His cognitive flexibility was within the average range. The client required a long period of time to make decisions and implement behavioral changes in the face of new circumstances. Other components of his executive functions, such as his ability to organize and monitor his actions were preserved. Mr. Silva seemed to become increasingly aware of his deficits and difficulties during the assessment.

His behavior reflected a certain emotional dependence and insecurity, especially when compared to his pre-morbid characteristics when he already had complete independence from his family and an extensive social life. Another important factor that probably interfered with his cognitive performance was his level of anxiety, which proved to be high. It would be possible to conjecture that emotional factors are negatively affecting his ability to solve social problems and
face situations of frustration, however, there was no trend toward social isolation or socially inappropriate behavior.

**Feedback Session and Follow-Up**

Feedback sessions and a written report were provided for the client and then to his family. I initially asked their impressions about the assessment process and explored if there were any changes in their perceptions. Later, I explained the major findings. Attentional and memory functions were his major difficulties within the neuropsychological domains. Considering Mr. Silva’s academic background and professional experience, there was a serious impairment of his cognitive functions and emotional instability with difficulties in dealing with situations of frustration. Although cognitive and behavioral gains were observed by the client’s team and family, returning to pre-morbid work and the social activities were not possible at that time. I introduced the idea of cognitive reserve and pointed out that Mr. Silva could build compensatory strategies and successfully regain independence after rehabilitation. But at that time, it was important to begin his neuropsychological rehabilitation process even if he still had physical issues to deal with such as his visual and balance problems.

After explaining the neuropsychological test results, priorities and a few rehabilitation goals were established in collaboration with Mr. Silva and his family. The long-term goal remained to return to work adequate to his new condition but we agreed that such job position should be in Brazil. Then we established smaller steps to be achieved along the first year of rehabilitation. I referred him to an occupational therapist and a speech and language therapist to assist with some of the difficulties observed. After that feedback session, family orientation sessions were held and Mr. Silva started his participation in the neuropsychological rehabilitation group. Every semester, we met to review his goals and evaluate possible changes in the plan.

**Section III: Lessons Learned**

- Brazil is the only Latin American country that speaks Portuguese, and this fact led to a unique cultural situation in the continent despite its rich immigration history.
- Brazilian immigrants usually have high school degrees and some work history but after moving to foreign countries, they usually are forced to take jobs that demand lower educational levels.
- It is very common that Brazilians plan to return to Brazil after a few years with improved financial resources to open their own business. That initial plan is often postponed and this can be a source of frustration and sometimes even shame.
- Brazilians value social relationships and taking time to establish a strong rapport based on trust in the clinician professional training and willingness to help is essential to facilitate treatment participation and long-term interventions.
- Portuguese is spoken in different countries, so it is important that the interpreter/translator knows Brazilian Portuguese to avoid misunderstandings.
- Literacy level and familiarity with technology should be carefully assessed as usually only knowing the number of years of formal education is not enough to evaluate these skills.
- As Brazil has a continental dimension with a variety of cultural traditions, it is always suggested that this information be explored as a source of socio-economic information and developmental issues.
- Brazilians usually value a family-centered lifestyle and hospitality. Including family in the rehabilitation, planning can be a central pillar of a successful process.
A relaxed sense of time and informal relationship rules are common.
Assessment of immigration history and their plans and expectations might give some insight on the meaning of current facts and life situations.
As neuropsychologists are rare in Brazil, information about services and their possible benefits can promote client’s engagement. Family should always be included in assessment and rehabilitation.
Explanations about medical conditions and possible treatments in a simple language have a central role in promoting family and client active participation. Validation of their feelings and assessing their fears can increase their trust in professional abilities and avoid misunderstandings.
When making referrals, first present a work frame/case formulation and then articulate the reasons for including other professionals or treatments.
There is a paucity of reliable neuropsychological tests published, and the SATEPSI list is the best resource to find them. But clinical observations and a functional perspective can be crucial while planning assessment sessions.

References
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