Cultural Diversity in Neuropsychological Assessment
Developing Understanding through Global Case Studies
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Cross-Cultural Neuropsychological Assessment with Turkish Immigrants

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Section I: Background Information

Terminology and Perspective

People from Turkey are generally referred to as Turkish, Turks or Turkish American/Canadian, etc. However, people from Turkish ethnic minorities may prefer to be referred to in other ways. For instance, people from the Kurdish minority may prefer to be referred to as Kurdish, Turkish Kurdish or Turkish Kurd. Throughout the chapter, I will use the term Turkish to refer to people originating from the geographical area of Turkey and will only make ethnic distinctions when relevant.

I am a clinical neuropsychologist who mainly practices in a memory clinic in a public hospital in Denmark. I have worked extensively with the Turkish community in clinical and research studies. However, it is important to notice that I do not have a Turkish background myself but belong to the ethnic Danish majority. Thus, this chapter is based on my experiences working with the Turkish community for several years but will inevitably be from the perspective of an outsider.

Geography

The Republic of Turkey has a population of approximately 82 million people. It is a transcontinental country located mainly on the Anatolian peninsula in Western Asia, with a smaller portion on the Balkan peninsula in Southeastern Europe. It is bound by the Black Sea, the Mediterranean Sea, and the Aegean Sea. Turkey shares borders with Greece, Bulgaria, Georgia, Armenia, the Azerbaijani exclave of Nakhchivan, Iran, Iraq, and Syria.

History

The Anatolian peninsula, comprising most of modern Turkey, is one of the oldest permanently settled regions in the world. At various points in its history, the region has been inhabited by diverse civilizations including the Assyrians, Greeks, and Armenians. The foundation of Turkey began in the 11th century when the Sunni Muslim Seljuk Turks began migrating to the area. The region was part of the Ottoman Empire from the late 13th century onward. Following World War I and the Turkish War of Independence against occupying powers, the monarchy was abolished and on October 29, 1923, the Republic of Turkey was established with Mustafa Kemal Atatürk as its first president.

Since 1984, there has been active Kurdish–Turkish conflict between the Turkish state and Kurdish separatists, primarily in the southeast of the country. Various Kurdish groups, with the
most known being the Kurdistan Workers’ Party (PKK), demand separation from Turkey to create an independent Kurdistan or to have autonomy and greater political and cultural rights for Kurds in Turkey.

People

People from Turkey may have very different cultural experiences and worldviews depending on their ethnicity, spoken language(s), geographic location, educational experiences, religion, economic background, values, and customs. One should never make premature assumptions about cultural experiences or worldviews based on the country of origin. For instance, the experiences of a patient from a Turkish ethnic or religious minority may differ greatly from those of a patient from the Turkish majority. Similarly, a Turkish academic in Istanbul may share more worldviews with an academic in a large city in Western countries than with an unskilled worker from a small Turkish village. For descendants of Turkish immigrants who have grown up in a Western country, the picture is even more diverse as they have their unique mixture of intergenerational worldviews. It is important to not make assumptions based on ethnic or cultural background as there are as many different cultural experiences or worldviews as there are people. It is important to remember that all patients, irrespective of cultural background, bring their unique history and experiences that should be considered during clinical history taking.

Immigration and Relocation

Common reasons for Turkish people to leave Turkey include economic opportunity and family reunification. Significant Turkish populations are found in several countries throughout the world. These populations are constituted of both descendant of Turkish people who settled during the reign of the Ottoman Empire and more recent immigrants. In the United States, modern immigration from Turkey began with smaller numbers of Turkish professionals with Western social values arriving during the 1950s and 1960s. But it was not until after the 1970s that significant numbers of Turkish immigrants (approximately 200,000 people), representing the complex social mosaic of Turkish society, relocated to the United States. However, most Turkish migrants have relocated to Western Europe. Turkish people constitute the largest foreign-born population in Western Europe (approximately 5.5 million people, not counting descendants of Turkish immigrants). Due to significant waves of Turkish migration to Western Europe, Turkish people form the largest ethnic minority community in Denmark, Germany, and the Netherlands and the second-largest minority group in Austria. Other Western European countries also have sizeable Turkish communities.

Modern immigration of Turkish people to Western Europe began with Turkish Cypriots migrating to the United Kingdom in the early 1920s after the British Empire annexed Cyprus. Migration significantly increased during the 1940s and 1950s due to ethnic disputes between Turkish and Greek Cypriots. During the 1960s, migration from Turkey to Western Europe increased significantly, primarily due to large-scale Turkish labor migration. Large numbers of so-called guest workers arrived under bilateral Labour Recruitment Agreements between Turkey and several Western European countries. These agreements allowed the recruitment of migrant workers to work in the industrial sector in jobs that required few qualifications. The migrant workers were primarily young unskilled men from semiliterate agricultural backgrounds who left Turkey with a dream to save up enough money to be able to return home and start a small business. By the early 1970s, most of the Turkish migration to Western Europe happened through family reunification programs as many of the migrant workers had settled permanently and were now joined by their
families. Starting in the 1980s, politically active and often better educated, socialist Turks and Kurds began seeking asylum in Western Europe and particularly during the 1990s with many Turkish Kurdish asylum seekers coming to Western Europe due to displacement and the violence in the southeast of Turkey. Although there are no official estimates, the number of illegal immigrants in Denmark is generally considered to be very small.

In my experience, paying close attention to the migration history early in the history taking is not only important for gaining information about any pre-migration trauma, changes in socio-economic status after migration and other acculturation experiences, but also for establishing rapport. For most people, the decision to relocate to a different country and culture is an important and life-changing event that many, but not all, feel comfortable talking about. In my experience, a polite and genuine interest in this aspect of their lives as well as being able to ask the “right questions” based on the little knowledge I have about Turkish geography and Turkish immigration to Western Europe has helped me make patients feel more at ease in an unfamiliar situation. However, it may be important to be sensitive to the immigration status of the patient. For instance, asylum seekers may be reluctant to disclose their migration history due to uncertainty or fear that this may affect their asylum claim. Descendants of immigrants from Turkey may not have immigration experiences themselves but may still be affected by their parents’ or grandparents’ migration and acculturation experiences. This may affect both emotional well-being and test-taking approaches in an assessment. This is especially true for first-degree descendants who may have been raised by parents with little or no formal schooling or knowledge of the majority language.

Languages

Establishing language proficiency and bilingual/multilingual status is important to ensure good communication and valid evaluation of cognitive abilities. The official language in Turkey is Turkish, which is the first language of approximately 85% of the population. Approximately 12% of the Turkish population has the Kurdish dialect Kurmanji as their mother tongue, while several other languages and dialects are the mother tongues of smaller parts of the population. Turkish and Kurmanji languages have different writing systems that are both based on the Latin alphabet. However, irrespective of their mother tongue, most educated Turkish people read and write in Turkish as this is the official language that is taught in Turkish schools. Consequently, many Kurdish people will have Kurmanji or another Kurdish dialect as their mother tongue but will use Turkish for reading and writing and for common communication. Unlike many other alphabetic writing systems, Turkish orthography is characterized by completely predictable mappings between orthography, and phonology which has implications for the presentation of language disorders, their diagnosis, and rehabilitation. Although there may be some overlap between Turkish and Kurdish languages and between Kurdish dialects, knowledge of one language or dialect does not imply competence in another.

Today, schools in Turkey teach Turkish as well as a foreign language. The foreign language taught differs between schools, but English is most common. In some private schools, a second foreign language such as German or French is also an option.

Communication

Understanding of both verbal and non-verbal communication patterns may help establish rapport, accurate history taking, and effective feedback. For Turkish immigrants in Western Europe, lacking abilities in the majority language can pose a challenge for nuances in
communication. Age, seniority, and educational achievements tend to be respected. More formal tones, such as Dr. or Mr./Mrs. are often used with authority figures rather than first names, especially by older generations. Professionals such as medical doctors (and neuropsychologists working alongside those medical doctors) tend to be highly respected, which may be important to recognize as clinical diagnoses or recommendations may appear to be accepted without questioning or criticism, despite doubting or disagreeing with them. This may affect adherence to apparently agreed upon medical, therapeutic, or rehabilitation programs. Also, details about gender-specific medical issues or sexual life may not be readily shared with a professional of the opposite gender.

Some non-verbal communication patterns should also be mentioned. For more devout Turkish Muslims, there may be clearly delineated gender boundaries. Physical contact between genders may be avoided with people outside the family. Turkish people may prefer to simply say hello to someone of the opposite gender instead of shaking hands. The best advice is to take your cue from the other person. If their hand is offered, respond with a simple handshake. It is generally considered rude to refuse an offer, especially if you are a guest. However, traditional communications styles and customs may change due to acculturative influences as well as the general globalization of the world, especially among younger and more urban populations.

I remember an episode with an older Turkish woman who I visited for a normative test research study. She was the third person I visited for the study that day and was the third person to offer traditional Turkish tea and sweets. After politely finishing two cups of tea, I declined a third by smiling and saying, “no thanks, if I keep drinking tea, I'll need to run to the toilet all the time.” The male bilingual research assistant who interpreted during the visit looked at me somewhat taken aback and said, “I am not going to say that!” Instead, he politely explained to her in Turkish that “the doctor” did not need any more tea. Afterward, the research assistant explained that remarks about needing to go to the toilet were inappropriate for us to share with an older woman. Also, he taught me that if I did not want any more tea, I should simply leave the cup half full or untouched. Otherwise, a good host would keep bringing more tea.

**Education**

Quality and quantity of education are important factors to consider when doing neuropsychological assessments of Turkish people. There may be large differences between the quality of education from a small village school and an elite private school in a large city. Also, in the case of older people from rural areas, their educational level (years of education) is not necessarily based on ability but rather accessibility or opportunity. In many rural areas, schools stop after the 5th grade with no options for continued schooling in the area. Many families may not be able to afford to send all their children to school and would only send their boys. The teaching methods were typically based on rote learning rather than the applied emphasis in Western educational systems. This may affect the approach to testing and test-taking style. However, with the modernization of the Turkish educational system, there have been Western influences. In 1997, education reforms in Turkey extended compulsory schooling from 5 to 8 years and there has been a steady increase in the number of people attaining secondary and tertiary or post-secondary education. By 2018, about one-third of Turkey’s young adults had attained tertiary education.

Some Turkish migrants have academic degrees or other professional training that is not recognized after immigration. Often these people have had to give up the idea of pursuing a career based on these qualifications in their new country and have instead taken jobs within the service or transport industry or started up small businesses. This may have important implications for their identity and self-esteem, and ultimately their emotional well-being.
Literacy

Whereas illiteracy is uncommon among younger Turkish people, illiteracy is relatively widespread among older generations, especially in rural populations and among women. Thus, the literacy rate among men and women younger than 25 years is higher than 99%, whereas the literacy rate for men and women older than 65 years is approximately 93% and 70%, respectively. Importantly, the reason for illiteracy is generally lack of opportunity rather than lacking intellectual abilities. I clearly remember an older Turkish woman who told me that her parents had not allowed her to go to school as she had to stay at home and take care of her younger siblings, tend to farm animals, and help her parents in the fields. But she was eager to learn and with help from her brothers who attended school, and by reading pieces of old newspapers she picked up in the ditches on her way to the fields, she taught herself to read. Despite having no formal education, in my perspective, she clearly had good intellectual abilities. Although most immigrants who are illiterate function well in their pre-migration context, after migration to a highly literate Western society, lacking literacy can pose a significant barrier for acquiring skills in the new language, obtaining a job, accessing services, and supporting children through their schooling.

Experience from formal schooling and literacy is fundamental for performance on most commonly used neuropsychological tests and cognitive screening instruments. For instance, cognitively intact Turkish immigrants with little or no formal schooling or literacy will often score in the impaired range on the Mini-Mental State Examination (mean performance of approximately 21 points) as they have never obtained the skills required to solve items involving reading, writing, mental calculation and drawing. Generally, educational test bias in unschooled or illiterate people is reduced if assessments are performed with measures with greater ecological relevance. See Appendix for a list of tests with greater ecological relevance for people who are illiterate.

Values and Customs

Although the best way of obtaining insights into the norms and values held by individual patients is to ask the patients, some knowledge about commonly held values and norms in Turkish communities may help establish rapport and contribute to culturally sensitive history taking and feedback. Generally, traditional Turkish outlooks build on values of family-centrism, inter-dependence and collectivism, religiosity, respect, and hospitality. Even among modernized urban Turkish people, family loyalty, family obligations, and family honor remain strong considerations. Guests are typically treated with great hospitality, and offerings of traditional drinks, sweets, and food items are common ways to show gratitude and respect.

Respecting your parents or elders is central to Turkish culture, and the family may have a deciding voice in important life decisions, such as the choice of education or marriage partner. Although traditional arranged marriages are becoming less common among urban and younger generations, many Turkish people continue to have marriages planned by parents, with family decisions made cooperatively. The respect for older family members and the weight on cooperative family decisions can also affect decisions about caregiving. I have met several family caregivers of patients with advanced dementia who were unable to make the decision to move the person with dementia to a nursing home, although they hardly coped anymore. This was both out of love and respect for the older family member and due to personal and cultural expectations about caring for older family members. In addition, members of the extended family, sometimes including those living in another country, have opposed the idea of nursing homes. This may be important to have in mind when providing feedback or clinical recommendations.
A focus on inter-dependency and collectivism can translate into taking care of the family and greater good before oneself. Children are generally brought up with a value that individual decisions need to be in harmony with the family and cultural structures. I have observed caregivers and patients who, although acknowledging psychological stress and burden, chose not to follow recommendations for self-help if this meant putting their own needs before those other family members. Descendants of Turkish immigrants or those who immigrated at a very young age may have a different cultural mindset than their parents or grandparents, which may lead to inter-generational conflict. The adoption of more Western individualistic worldviews among younger people can make it hard for the older generations to understand or relate to the lives of their children or grandchildren, which may lead to feelings of cultural isolation and loneliness. This may be important to consider in assessment and recommended treatments of older people as this may affect their emotional well-being.

The great cultural value given to time and speeded performance in individualistic Western societies is less pronounced in traditional Turkish culture. This may affect test-taking approaches and results on timed measures as patients may pay closer attention to precision and detail than performance speed. Although patients with experience from formal schooling and numerous academic tests and exams will typically instantly know what is expected in the test situation and understand the inherent value of speeded performance in many neuropsychological tests, this may not be the case for older and less test-wise patients. I remember an older female Turkish patient who I instructed to connect the numbered circles in the Color Trails Test as fast as she could, but without making any mistakes. She immaculately completed the task in a little more than three minutes, making sure the lines were neat and straight and hit the center of the intended targets. Afterward, I asked her if she was satisfied with her performance. She took a glance at the paper and said: “Yes. I didn’t make any mistakes, did I?”

**Gender Roles**

Understanding values concerning gender roles in Turkish culture may help avoid assumptions during communication and support treatment plans that align with these values. In traditional Turkish culture, men and women generally constitute largely separate sub-societies, each with its own values, attitudes, and perceptions of the other. In traditional families, gender roles are clearly defined, and each gender more or less reigns within its appropriate realm. The husband/father is considered the head of the household and is generally in charge of matters involving household interactions with the public, whereas the wife/mother is in charge of the house and family.

Even among more modern urban people, family honor often remains a strong consideration and gender roles may constrain social relations. For instance, friendships between men and women who are unrelated are generally not considered acceptable. Although it may be accepted that men and women meet socially or date, parents will often try to monitor such relationships and discourage their daughters from becoming involved with a man unless the marriage is expected. Among more traditional families, dating could ruin the reputation of a young woman and dishonor her family.

Although women have been discouraged to wear hijab, or headscarves, in public venues by the authorities in Turkey, the use of headscarves has been common in rural areas and among women holding more traditional or religious views. While many younger Turkish women follow the latest Western fashions in clothes and cosmetics, some have readopted headscarves and modest dresses to demonstrate their commitment to Islam. Yet again, others seem to have found a middle way. I often meet young Turkish women who wear headscarves but dress and wear makeup according to Western fashion. Values concerning gender roles are highly individual and seem to be constantly changing and negotiated due to the influences of mass media, education, and acculturation.
Religion and Religiosity

Attention to religious views and religiosity in Turkish patients may help to understand worldviews and develop recommendations in line with those views. Turkey is officially a secular country with no official religion. However, most of the population is Muslim and public schools currently teach mandatory religion classes focusing mainly on the Sunni branch of Islam. Most Muslims in Turkey are Sunni, followed by a considerable minority of Shia-Alevi Muslims. Among non-Muslim religions, Christianity and Judaism are the largest but constitute only a small minority of the population.

Religiosity differs greatly among Turkish people, with recent polls indicating that about half of the population considers themselves religious, whereas about one-third do not consider themselves religious. Although some Turkish Muslims say the five daily prayers, others may only say some of the daily prayers or pray even less. To many Turkish immigrants, going to worship at the Mosque on Fridays is an important aspect of both their religion and social life within the Turkish community.

Most Turkish Muslims celebrate the Ramadan, a month of fasting, prayer, reflection, and community, during the ninth month of the Islamic calendar. Fasting from sunrise to sunset is obligatory for all adult Muslims who are not acutely or chronically ill, traveling, elderly, pregnant, breastfeeding, diabetic, or menstruating. As the spiritual rewards of fasting are believed to be multiplied during Ramadan, Muslims often refrain not only from food and drinks but also tobacco, sexual relations, and sinful behavior, devoting themselves instead to prayer, recitation of the Quran, and the performance of charitable deeds. The end of Ramadan is marked by the Eid al-Fitr celebration, also called the “Festival of Breaking the Fast.”

Being aware of the celebration of Ramadan may be important for the planning of assessments and interventions. If assessments are made during Ramadan, these are best scheduled in the morning as studies have shown cognitive functioning to be affected later in the day after several hours of fasting. Also, as oral medications are not allowed during the hours of fasting, this may affect the management of medications. Conditions that require medications taken several times a day or that are affected by food and drink intake (e.g., diabetes) may require adjustment of the treatment.

Mental Health Views

For many Turkish immigrants, there are barriers to accessing specialist health services in the country of migration, including psychological and neuropsychological services. Language barriers and little acculturation may result in lacking awareness about available services or challenges taking contact to such services. Although it may be common to go to their general physician for physical conditions, seeking help from “outsiders” for mental health issues, including cognitive dysfunction, may be considered shameful both to the affected person and the family. There is still a lot of stigma around mental health issues and cognitive dysfunction in the Turkish community.

While most Turkish people primarily adhere to the dominant Western biomedical model of mental illness that posits that mental disorders are brain diseases caused by chemical imbalances, emotional distress may be expressed in more somatic terms, and there may be alternative coping systems involving support from extended family or friends or seeking advice from a religious leader or Imam. This may be more acceptable than consulting a psychologist or participating in support groups. Mental health issues and cognitive decline is still very much considered a family matter that should not be shared with outsiders. Some may believe that cognitive or emotional issues are being due to the will of God, as a test or as a punishment, or as an opportunity to remedy disconnection from God. However, religious explanations of mental illness are generally not seen to conflict with biological or environmental causes. For Muslims, health is considered a gift
from God, which should be cherished. Accordingly, they have an obligation to look after their health by seeking advice and receiving treatment.

Among Turkish immigrants in Western Europe, it may not be uncommon for patients to consult or get a second opinion from a medical specialist in Turkey when on holidays in the country. It may be important to be aware of this, particularly if the diagnostic conclusions and clinical recommendations of these specialists differ from those made in the Western healthcare system or if medical treatments have been initiated.

**Acculturation**

There is large variation among Turkish people in their psychological and social experiences from immigrating to a Western country. Whereas some have coped well with migratory stress and changes in cultural identity and have quickly acquired culture-specific skills, including skills in the majority language, others have been less successful. Especially among the older generations of working migrants, many have struggled with *separation* and *marginalization* in the new country. I have seen several older Turkish patients with five years of schooling or less from a village school in central Anatolia, who had lived in Denmark for more than 40 years but spoke little Danish, only used Turkish media, and had no social relationships outside the Turkish community. Several of these patients had children with post-graduate educations and careers within the Danish public or private sector.

*Acculturation* is known to affect performance on several neuropsychological measures. Among middle-aged and older Turkish immigrants in Denmark, the most robust effects of acculturation have been identified on measures of processing speed and executive function. Any effects on other measures tend to disappear when controlling for the effects of education. However, acculturative stress or unsuccessful acculturation patterns may also affect emotional and social well-being, which may in turn influence cognitive functioning. I have seen several patients referred for evaluation of possible dementia who presented with cognitive complaints that, after thorough history taking and assessments, clearly reflected psychosocial stressors related to acculturation. In my work with older Turkish immigrants, I have often encountered issues of social isolation, loneliness, and feelings of “not belonging.” They never truly felt at home in Denmark, but at the same no longer felt at home in Turkey since it had greatly changed since they left the country. At the same time, intra-familial differences in acculturation often lead to changes in traditional family roles and dynamics. I remember a young adult Turkish woman told me that she had found it a little hard to wrap her head around the fact that after she had completed a Bachelor of Science in Public Health, she had become the “family expert” on medical issues. Now members of her extended family would consult her, rather than her father or uncles, on all kinds of medical matters.

Attention to acculturation stressors along the life spectrum may be important for understanding the clinical presentation, influence on diagnostic conclusions, and be directive for clinical recommendations.

**Approaches to Neuropsychological Evaluation**

In my clinical work, I mainly see Turkish patients in a memory clinic setting in a public hospital. The neuropsychological evaluation consists of a 2- to 3-hour session as part of a comprehensive diagnostic workup. Patients are referred after an initial evaluation by a neurologist and specialist nurse in the clinic. After the neuropsychological evaluation, patients have another appointment with the neurologist, who provides diagnostic feedback based on the results from all available clinical and biomarker investigations, including the neuropsychological evaluation. Access to
memory clinic services, including clinical and biomarker assessments, follow-up, and support, are free for all legal Danish residents but require a referral from a medical doctor. This generally applies to all specialist medical services, including neuropsychological evaluations, rehabilitation, and treatments.

When Turkish patients present for neuropsychological evaluation, they are often unsure about the purpose of the assessment and what to expect. Thus, I usually begin the evaluation by explaining the purpose and nature of the assessment process. As many patients are also unfamiliar with or insecure about issues of confidentiality, I will normally also explain this, including the limits of confidentiality. As patients may be particularly concerned about confidentiality among interpreters from the Turkish community, I often stress that confidentiality applies not only to me but also the interpreter.

As I speak neither Turkish nor Kurmanji, I will often need to do evaluations with an interpreter. I always insist on using professional interpreters, even when patients ask for a family member to do the interpretation. This is both out of ethical and professional considerations. First, I am concerned about the quality of interpretations done by family members, who are emotionally involved with the patient, usually not trained as interpreters, may not be familiar with or adhere to interpreting ethics, and may not have a sufficient psychological or medical vocabulary in either language. This may be particularly concerning for the validity of the neuropsychological testing but also for the accuracy of the information obtained through history taking. Second, I would like any accompanying family members to be exactly that—accompanying family members. Rather than focusing on communication and language matters, they should be able to provide emotional support to the patient and contribute with their own perspectives.

When using professional interpreters, I always take time to inquire about their experience with (neuro)psychological testing prior to testing and instruct them to interpret what is being said as precisely as possible, unless I say otherwise. Importantly, most interpreters have little knowledge about cognition or neuropsychological testing, and the way we communicate during formal assessments differs greatly from everyday conversation. I remember an episode with an older male Turkish patient who did a naming test as part of his assessments. When shown a picture of a turtle, he responded “kurbağa,” which the interpreter translated as “turtle.” As I was familiar with the Turkish words for the pictures after using the test for several years, I knew that this was an atypical response. When I asked the interpreter about this and told him that I believed the correct Turkish word for the turtle was “kaplumbağa,” he said: “Ah, he did say frog, but he meant turtle.” The interpreter obviously did not know that this discrepancy was important in a neuropsychological assessment and was focused more on conveying the meaning than detail.

Prior to neuropsychological testing, I always evaluate whether commonly used tests and norms are culturally, linguistically, and educationally appropriate to the patient. As this will often not be the case, I typically do assessments with a battery of cross-cultural tests that may be supplemented with commonly used tests that I evaluate to be relevant to the clinical question and appropriate for the patient.

Section II: Case Study — “I’ve Heard a Stressful Life Can Give Alzheimer’s”

Mr. Kaplan was a 57-year-old Turkish patient referred to neuropsychological evaluation due to concerns about progressing memory impairment. At the initial consultation with a neurologist in the memory clinic, he had abnormal performances on the Mini-Mental State Examination (21/30 points) and Addenbrookes Cognitive Examination (63/100 points) that were administered in Danish as part of the routine diagnostic workup.
Behavioral Observations

Mr. Kaplan came to his neuropsychology appointment alone after taking public transportation from his home. He was conversational in Danish but spoke with a slight accent. Mr. Kaplan was evaluated in Danish and initially appeared somewhat quiet, lethargic, afflicted by pain and with low mood. He expressed that he had not slept well the night before the evaluation due to pain and nervousness about the evaluation. His spontaneous speech was slow and due to sudden bursts of back pain, he would often stop in the middle of a sentence without completing it. On a scale from 0 to 10, he rated his level of pain as 5 to 6, indicating moderate pain. As the conversation progressed and I explained the purpose of the evaluation and the process involved in neuropsychological assessment, he visibly relaxed and became more focused. After explaining that I was not trying to be inquisitive but was trying to understand his experiences to be helpful, he described his life situation and current difficulties in detail. He was generally composed but visibly struggled to hold back tears when talking about certain points in his history. He built good rapport but sometimes struggled to discern personal and professional boundaries. For example, he was interested in knowing my political views and inquired about the quality of my family relations. During neuropsychological testing, he stated he was nervous but visibly relaxed after the first couple of tests. He remained focused throughout the testing session, gave a good effort, and showed no signs of fatigue.

Presenting Concerns

Mr. Kaplan stated that he was afraid he was developing “Alzheimer’s.” One of his uncles was diagnosed with Alzheimer’s disease in Turkey about a year ago and based on the family’s descriptions and what he could read on the internet, he found that he had many of the same symptoms. He explained that he forgot everything. He mainly had problems with “short-term memory” and could forget his tasks or appointments, to pay the bills, or to remove pots from the stove. Also, he could forget that he had already taken his pain medication resulting in him taking a double dosage and making him “completely messed up.” As he had also heard that a stressful life or stressful life events could cause dementia, he contacted his GP, who referred him to the memory clinic. Mr. Kaplan explained that his present difficulties all began after a car accident about two years ago where he suffered multiple injuries. He was unconscious when rescued from the car but did not recall having any cognitive symptoms immediately after the accident while admitted to the hospital. However, after being released from the hospital, he believed he had problems with memory and concentration influenced by “constant pain.” Both pain and cognitive difficulties had been progressing during the last year.

Daily Functioning

In his adult life, Mr. Kaplan had managed several smaller Turkish import/export and grocery businesses with various successes. After the car accident, he had been unable to work, and several job-training programs had been unsuccessful. Consequently, he was now receiving cash benefits (government assistance for people who are out of work, not studying, and unable to support themselves financially) and feared being evicted from his apartment as he struggled to pay the rent. Most days, he would go for short walks around the neighborhood, and when he could afford it, he would go to a Hamam (Turkish bath) as the heat from the steam bath and the heated marble stones lessened his pains. Most days, however, he would stay at home in front of the TV, but without registering what was on. He was unable to concentrate on reading, which
extended to mailed correspondence from his GP. He had some contact to one of his sisters, but
during the last years, he had gradually lost contact to his family and friends as he generally
avoided socialization.

**Health History**

Mr. Kaplan was unaware of any problems with his birth or early development. He had been medi-
cally healthy until he was involved in a car accident. An MRI scan had verified a herniated disc in
his upper back. He stated that he took prescribed pain medication due to chronic pain in his back,
shoulders, and arms. Otherwise, his most recent blood work was unremarkable, and a brain MRI
ordered at the neurological consultation in the memory clinic was described as normal. He was
a current smoker (approximately 20 cigarettes a day) but had no history of drinking or abusing
drugs. Most nights he hardly got any sleep as the pain increased during the night, making it hard
for him to lie down. Consequently, he always felt tired and often involuntarily took short naps
during the day. An uncle had been diagnosed with Alzheimer’s disease, but otherwise, there was
no known family history of neurological disorders. A sister had a history of mild depression. As
far as he knew, his children were healthy.

**Educational History**

In Turkey, Mr. Kaplan passed middle school (eighth grade) exams. Afterward, he worked with
his father as a street vendor. He described himself as an average student who was eager to
learn. He did not struggle with any particular subject and did not find it hard to stay focused
in school. Upon arrival to Denmark in 1980, he attended weekly Danish language classes and
was quick to pick up the new language, passing both oral and written Danish language exams
after two years.

**Language Proficiency**

Mr. Kaplan was multilingual. His dominant language was Turkish, followed by Kurmanji and
Danish. Turkish was the main language spoken at home by his family during his childhood.
However, his mother and maternal family would also speak to him and his sisters in Kurmanji.
He could read and write in Turkish, which was formally taught throughout his schooling. He
described himself as being “almost fluent” in Kurmanji but to be unable to read or write in
Kumanji. Mr. Kaplan indicated that his Danish language proficiency was “good” for speaking
but “suboptimal” for reading and writing.

Mr. Kaplan’s dominant language was judged to be Turkish, but he expressed a preference for
testing in Danish without involving an interpreter. Although he was conversantly fluent in Danish,
this was not sufficient to match age and education-based expectations of available Danish-based
neuropsychological tests. However, I found it acceptable to test him in Danish using appropri-
ate cross-cultural neuropsychological measures and normative data that are well validated and
matched to his cultural and linguistic background.

**Social/Cultural History**

Mr. Kaplan grew up in Ankara, the capital of Turkey. He was the youngest child of a mother from
the Kurdish minority and a father from the Turkish majority. His parents lived with Mr. Kaplan
and his two older sisters in a one-bedroom apartment in a poor area of the city. His parents had
both lost one of their parents at a young age and had to “become adults” at an early age. Although they were both Sunni Muslim, their families never accepted their inter-ethnic relationship or marriage. It was never directly articulated by Mr. Kaplan, but these experiences clearly affected his own upbringing and relation to his parents.

Mr. Kaplan’s father worked as a street vendor while his mother did not work outside the home. Although his parents were poor, they were always able to provide for their children’s needs through his early childhood. None of his parents had any formal schooling and both were illiterate, but they valued education and sent both him and his sisters to school.

Mr. Kaplan revealed that his father had been involved with the socialist political movement. During his youth, there was increasing political unrest and violence in Ankara, and he revealed that he had witnessed several people being killed and himself had been beaten up quite severely. He also revealed that he and his family had experienced periods of starvation as they were afraid to leave home due to his father’s political activity and the dangerous situation in the city.

Eventually, Mr. Kaplan’s parents left Turkey and sought asylum for themselves and their children in Denmark. When he came to Denmark at the age of 17, he initially struggled with the language barrier and the many things that were done or viewed differently in the new culture. However, his family lived in an urban area with easy access to public transportation and options for participating in sports and social activities. Some of their neighbors were of Turkish background and reached out to them socially to help the family get established in the new country. Over the years, he became increasingly immersed in the dominant Danish culture, paid less attention to Islamic principles and started dating Danish girls. His parents highly disapproved of this and slowly he distanced himself from his family. He indicated that he never became an integrated part of the Turkish or Kurdish community due to his “mixed ethnicity.” He had never felt welcome among neither Turkish nor Kurdish people, felt looked down upon from both sides, and had occasionally been met with hostility.

In his mid-20s, Mr. Kaplan fell in love with a Danish woman, got married and had two children. Due to increasing tension and conflict in their relationship, which he partly related to cultural differences, they decided to get divorced after four years of marriage. A couple of years later, he married another Danish woman. This marriage was characterized by “chaos and turmoil” from the beginning and to his great despair their three children were placed in foster care. As he used all his energy on staying in touch with these children, he slowly lost contact with his two children from his first marriage. After the car accident, he lost an insurance claim regarding monetary compensation for loss of earning capacity, lost his girlfriend at the time, and lost contact to his three children in foster care as he was “unable to live up to the requirements” and “did not have anything to offer.”

**Emotional Functioning**

Mr. Kaplan expressed that chronic pain had a significant impact on his mood. He never felt in a good mood, and if the pain increased, he could become angry or even aggressive. He had previously been on anti-depressive medication but had stopped taking the medication due to unwanted side effects. Although he felt guilty and ashamed about his social situation and about abandoning his children, he believed that his low mood was related to the chronic pain. As this had repeatedly been rejected by health and social care workers who had told him that his present difficulties were unrelated to the car accident, he stated that he had probably become somewhat paranoid and lacked trust in people. In some ways, he felt that he had “given up.” He expressed that he did not understand why so many bad things had happened in his life and that he often found himself concluding that it must be “a punishment from God.” He had never contemplated suicide as this is strictly forbidden in Islam.
Preliminary Formulation

At the end of the interview, I mainly suspected Mr. Kaplan's cognitive difficulties were secondary to emotional disorder and pain. Although some of his symptoms may also be seen in post-concussion syndromes (concentration and memory complaints, irritability and other personality changes, sleep disturbances, psychological adjustment problems, and depression), this was ruled out as the car accident happened two years prior to the evaluation and his present cognitive complaints concerned symptoms that had only developed during the last year. Even though Mr. Kaplan did not recognize or want to acknowledge it, he seemed to suffer from depression. In addition to medically confirmed issues with pain, Mr. Kaplan's personal and family history, including pre-migration trauma and immigration and acculturation-related stressors, clearly contributed to the clinical picture. Mr. Kaplan had struggled to establish a new cultural identity in Denmark. He had been unable to develop or maintain satisfying social relationships, and his current physical and emotional difficulties had further contributed to social isolation.

Despite these considerations, Mr. Kaplan was referred for evaluation of progressing memory impairment. So, to rule out possible organic brain dysfunction, I proceeded to administer a neuropsychological battery that could assess his cognitive functioning in a culturally sensitive manner.

Test and Norm Selection

Based on Mr. Kaplan's educational background, level of acculturation, and language proficiency in Danish, I chose to administer the European Cross-Cultural Neuropsychological Test Battery (CNTB), supplemented with two commonly used Danish-based tests. The CNTB covers several cognitive domains, can validly be applied across several ethnic groups, languages, and educational groups, including illiterate groups, without the need to change the content. Also, the CNTB was developed to be applied with an interpreter and is minimally affected by acculturation. None of the tests in the CNTB require reading skills in any language. Published age and education adjusted multi-cultural norms based on 330 healthy middle-aged and older people, including Turkish and Kurmanji speakers residing in Western Europe, are available. I administered the following tests in Danish:

1. Rowland Universal Dementia Assessment Scale.
2. Recall of Pictures Test.
3. Enhanced Cued Recall using a slightly modified version of the original test, using colored pictures.
4. Semi-Complex Figure.
5. Serial Threes.
7. Color Trails Test 1 and 2.
8. Five Digit Test parts 1, 2, and 3.
10. Simple copying tasks.
11. Clock Drawing Test.
12. Clock Reading Test.
13. Category Fluency Test (Animals, Supermarket Items).

Also, I administered a brief mood questionnaire, the 15-item version of the Geriatric Depression Scale (GDS-15). As there was no obvious secondary gain and Mr. Kaplan presented focused
and gave good effort throughout the testing session, I saw no need to conduct formal performance validity testing.

**Test Results and Impressions**

In contrast to the abnormal performances on commonly used cognitive screening tests at the initial consultation with a neurologist, Mr. Kaplan generally performed in the average range across all administered neuropsychological tests after adjusting for age and education. He had slightly more errors than expected across executive function measures, but performances were formally within the normal range. His performance on one processing speed measure was slightly slower than expected (SDMT, 23rd percentile), but this was based on age and education-based norms for the Danish majority population and was not consistent with performance on other cross-cultural processing speed measures. On learning and memory tests, he had a somewhat unstructured approach during the initial encoding of new verbal and visual material, but his total learning and recall of previously learned material was within the normal range. Delayed recall and recognition were unremarkable. Overall, his cognitive profile was judged to be intact.

Evaluation of mood indicated moderate depression (GDS-15 score of 12). He reported symptoms of persisting feelings of sadness, emptiness, and hopelessness, loss of interest and pleasure in most of his normal activities, and feelings of worthlessness and guilt. He also reported problems sleeping, tiredness and fatigue, and trouble concentrating and remembering things. These symptoms could make even smaller tasks in the home seem unsurmountable, and often he just wanted to stay at home rather than go out to socialize or do new things. He reported that increasing physical pain could result in angry outbursts, irritability, or frustration, even over small matters.

Overall, I diagnosed Mr. Kaplan with moderate to severe depression with the recognition that chronic pain complicated the picture and most likely contributed to and was affected by the depressive symptoms. I also acknowledged the influence of frightening experiences in his childhood, problems related to his social environment, including acculturation difficulties, social exclusion, and discrimination, problems related to his family circumstances, including disruption of his family by separation and divorce, and problems related to employment, housing and economic circumstances.

**Feedback and Follow-Up**

Mr. Kaplan received feedback immediately after neuropsychological testing. He was anxious to know if he had “Alzheimer’s.” I shared my impression that he did not have a dementia disorder based on his neuropsychological test profile and the normal brain MRI scan. I provided education about signs and symptoms of dementia disorder and we discussed his worries about developing Alzheimer’s disease. I explained that although chronic stress has been found to increase the risk of Alzheimer’s disease, Alzheimer’s disease is caused by disease in the brain and only rarely affects people younger than 65 years. I also explained how his cognitive difficulties could be understood from an attentional and motivational perspective rather than one involving a degenerative brain disorder. He seemed relieved but at the same time was anxious to know what was then wrong with him.

I then carefully proceeded to explain the effects of pain, sleep deprivation, and emotional distress on cognitive functioning and mood. When I shared my impressions regarding depression, he acknowledged it and stated that the car accident was the “straw that broke the camel’s back.” He stressed that if it had not been due to chronic pain, he would have been able to manage his psychosocial stressors and shared that he feared a mental health diagnosis would be stigmatizing and label him as “crazy” or as a “weak man.” I expressed understating of his beliefs and struggle with
the diagnosis. I then continued to explain the neurobiological basis of depression and the mechanism of action of medical treatments for him to understand depression as a medical condition. I also explained that proper treatment of his emotional problems was likely to have a positive effect on the pain and sleep problems.

We briefly discussed options of seeing a psychiatrist or being referred for psychotherapy, which he blankly rejected. He preferred the option of having medical treatment initiated by a neurologist in the memory clinic. Although he expressed that it had been nice to talk to me about his life situation as he was rarely able to do so without it being stressful and uncomfortable, this preference came as no surprise to me given his understanding of his condition.

He also needed support with pain management. I presented the option of getting a referral to an interdisciplinary pain management clinic and explained that in addition to medical treatment, this clinic could help him manage pain through different physical, behavioral, and psychological techniques. He was happy that I acknowledged the significance of chronic pain and promised to consider this option.

When Mr. Kaplan returned to the memory clinic for follow-up three months later, I could read from his medical file that he had taken the prescribed anti-depressive medication and that the treatment had lifted his mood and improved his sleep which had also alleviated some of his cognitive symptoms. Also, I could read that he had actively inquired about help with pain management and left the consultation with a referral to a nearby pain management clinic.

Section III: Lessons Learned

- Most Turkish people are Muslim, and traditional Turkish outlooks build on values of family-centrism, inter-dependence and collectivism, religiosity, respect, and hospitality. However, people of Turkish ancestry may have very different cultural experiences and worldviews depending on their ethnicity, spoken language(s), geographic location, educational experiences, religion, economic background, values, and customs. You should never make premature assumptions about cultural experiences or worldviews based on country of origin. If in doubt, the best solution is always to ask the patient.

- Most Turkish people speak Turkish as their first language, but a large minority have the Kurdish dialect Kurmanji as their mother tongue, while a smaller minority have another language or dialect as their mother tongue. Irrespective of their mother tongue, most Turkish people read and write in Turkish.

- Some Turkish migrants have academic degrees or other professional training, while others have limited or no formal school experience. Illiteracy is uncommon among younger Turkish people, whereas illiteracy is relatively widespread among older generations, especially in rural populations and among women.

- If language barriers necessitate the use of an interpreter, generally insist on using a professional interpreter—even in situations where the patient asks for a family member to do the interpretation. This is both out of ethical and professional considerations. First, accompanying family members should be exactly that—accompanying family members. They should be able to provide emotional support to the patient and contribute with their own perspectives, rather than focusing on communication and language. Second, the quality and validity of interpretations performed by family members are uncertain as they are emotionally involved with the patient, usually not trained as interpreters, may not be familiar with or adhere to interpreting ethics, and may not have a sufficient psychological or medical vocabulary in either language.

- A polite and genuine interest in the migration history and other cultural aspects of the patient’s life as well as being able to ask the “right questions” based even on a little knowledge...
about the patient’s country of origin and cultural background, may help the patient feel more at ease in an unfamiliar situation and establish rapport.

- When selecting the test battery and normative data, educational background, level of acculturation and language proficiency in the test language should always be considered. If you do not have access to validated tests in the patient’s dominant language or representative normative neuropsychological test data for the specific minority group, consider using a battery of cross-cultural tests such as the European CNTB.

- Although the matching of patient and neuropsychologist on language and ethnicity is often preferable when this is possible, in the case of Mr. Kaplan, my position as an “outsider,” representing the medical system and ethnic majority in Denmark, probably made it safe for him to share intimate details about his cultural experiences, and cognitive, social and emotional difficulties. He may have been less likely to reveal the same information to a neuropsychologist with Turkish or Turkish Kurdish background or if the evaluation was done with an interpreter as he may not have felt reassured about confidentiality with someone from the Turkish community.

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Glossary

**Eid al-Fitr.**  *Eid al-Fitr* is the holiday that marks the end of Ramadan and the beginning of the next lunar month. It is declared after a crescent new moon has been sighted or after completion of 30 days of fasting if no sighting of the moon is possible. Eid celebrates the return to a more natural disposition of eating, drinking, and marital intimacy.

**Five daily prayers.**  *Salat*, ritual Islamic prayer prescribed five times daily (at dawn, early afternoon, late afternoon, at sunset, and at night), constitute one of the Five Pillars of Islam. The other pillars of Islam are *shahada* (confession of faith), *zakat* (almsgiving), *sawm* (fasting, especially during the month of Ramadan), and *hajj* (the pilgrimage to Mecca).

**Hamam.**  A Hamam or Turkish bath is the Turkish variant of a steam bath. Traditional hamams contain three chambers: a hot room to steam, a warm room to scrub, and a cooler room to relax. Not all hamams have this exact layout, but they all involve a hot marble steam room with a raised circular platform on which bathers can lie to soak in the sweltering heat. A traditional Turkish bath includes traditional body scrubbing with a handwoven wash cloth known as a kese, a foam wash, and a massage. The Hamam is thought to have beneficial properties for people suffering from localized aches and pains since better blood circulation carries more oxygen to damaged areas and results in reduction in pain and more rapid healing.

**Kurdish or Kurds.**  Kurds are an ethnic group native to a mountainous region of Western Asia known as Kurdistan, which spans southeastern Turkey, northwestern Iran, northern Iraq, and northern Syria. Also, exclaves of Kurds are found in other parts of Iran and Turkey, and a Kurdish diaspora has developed in Western Europe. The worldwide Kurdish population is estimated to be between 30 and 45 million people.

**Kurdish–Turkish conflict.**  This conflict is an armed conflict between the Republic of Turkey and various Kurdish insurgent groups, which have demanded separation from Turkey to create an independent Kurdistan or to have autonomy and greater political and cultural rights for Kurds inside the Republic of Turkey. The main rebel group is the Kurdistan Workers’ Party.
(PKK). Although the Kurdish-Turkish conflict has spread to many regions, most of the conflict has taken place in southeastern Turkey, which corresponds with Northern Kurdistan.

**Kurdistan Workers’ Party (PKK).** A revolutionary group, the PKK (Kurdish: Partiya Karkerên Kurdistan) was founded in 1978 by a group of Kurdish students led by Abdullah Öcalan. The initial reason given by the PKK for this was the oppression of Kurds in Turkey. At this time, the use of the Kurdish language, dress, folklore, and names was banned in Kurdish-inhabited areas. Following a military coup in 1980, the Kurdish language was officially prohibited in public and private life. Many who spoke, published, or sang in Kurdish were arrested and imprisoned. The PKK was formed as part of a growing discontent over the suppression of Turkey’s ethnic Kurds in an effort to establish linguistic, cultural, and political rights for Turkey’s ethnic Kurdish minority.

**Kurmanji.** Kurmanji is the most spoken form of the Kurdish language. Kurmanji is also termed Northern Kurdish and is the northern dialect of the Kurdish languages, spoken predominantly in southeast Turkey, northwest and northeast Iran, northern Iraq, northern Syria and neighboring regions. Phonological features in Kurmanji include the distinction between aspirated and unaspirated voiceless stops and the presence of facultative phonemes. Kurmanji is written using the Latin alphabet and consists of 31 letters (the 26 letters of the ISO basic Latin alphabet with ç, ê, î, ş, û added).

**Ramadan.** Ramadan falls during the ninth month of the Islamic calendar and is observed by Muslims worldwide as a month of fasting (sawm), prayer, reflection, and community. The annual observance of Ramadan is regarded as one of the Five Pillars of Islam and lasts 29–30 days, from one sighting of the crescent moon to the next. Fasting from sunrise to sunset is obligatory for all adult Muslims who are not acutely or chronically ill, traveling, elderly, pregnant, breastfeeding, diabetic, or menstruating. During Ramadan, Muslims refrain not only from food and drinks but also tobacco products, sexual relations, and sinful behavior.

**Sunni and Shia-Alevi.** After the death of the Islamic prophet Muhammad, a dispute arose about his legitimate successor. The Islamic community was divided into those who adhered to Abu Bakr, named Sunnis, and those who sided with Ali, called Shia. Concurrently, people who sided with Ali were called Alevis, defined as “those who adore Ali and his family.” Political tensions between Sunnis and Shias continued with varying intensity throughout Islamic history and have been exacerbated in recent times by ethnic conflicts. Today, Sunni Islam is the largest denomination of Islam, followed by 87%–90% of the world’s Muslims. Shia-Alevis are primarily found among ethnic Turks and Kurds in Turkey and constitute the second-largest branch of Islam in Turkey (between 10% and 20% of Turkey’s population), with Sunni Islam being the largest.

**Turkish.** Turkish is the most widely spoken of the Turkic languages. Distinctive characteristics of the Turkish language are vowel harmony and extensive agglutination. The basic word order of Turkish is subject–object–verb. Turkish has no noun classes or grammatical gender. The language makes usage of honorifics and has a strong T–V distinction, which distinguishes varying levels of politeness, social distance, age, courtesy, or familiarity toward the addressee. The plural second-person pronoun and verb forms are used referring to a single person out of respect. Turkish is written using the Latin alphabet and consists of 29 letters (q, x, w omitted and ç, ş, ğ, ı, ö, ü added).

**Turkish Cypriot.** Turkish Cypriots or Cypriot Turks are ethnic Turks originating from Cyprus. Following the Ottoman conquest of Cyprus in 1571, about 30,000 Turkish settlers were given land once they arrived to the island. The influx of ethnic Turkish settlers to Cyprus continued intermittently until the end of the Ottoman period. Today, Northern Cyprus is home to a significant part of the Turkish Cypriot population, but the majority of Turkish Cypriots live abroad, mainly in Turkey and the United Kingdom.
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