Section I: Background Information

Terminology and Perspective

People of Lebanon are referred to as Lebanese and belong to the broader Middle Eastern heritage. My perspective about Lebanon and Lebanese patients comes from being a bilingual (Arabic and English) speaking Lebanese immigrant who traveled to the United States as an adult after completing undergraduate studies and two years of research and clinical training in Psychology in Lebanon. My clinical practice with Lebanese examinees is informed by my clinical and personal experience in Lebanon as well as by my graduate training in Clinical Psychology and Neuropsychology in the United States. I currently provide forensic and clinical services in a private outpatient setting in the Southeastern United States.

Geography

Lebanon is a country in the Middle East. The Mediterranean Sea borders it on the West and it is engulfed otherwise by land. According to Lebanon’s Ministry of Tourism website, Lebanon measures about 4,000 square miles with a population of 4.4 million.

History

Lebanon was under a French Mandate until its official independence in November of 1943. As such, there is much French influence. For example, while Arabic is the official language of Lebanon, French continues to be a form of second official language. Political turmoil plagues the history of Lebanon. An accounting of the wars and political tensions is beyond the scope of this chapter. However, it is valuable to note that the Lebanese population has experienced a variety of potentially individual and inter-generational trauma from war and political tensions.

People

In addition to Lebanese nationals, about 4% of the Lebanese population is of Armenian heritage. Further, there is a sizeable Syrian and Palestinian refugee population.

Immigration and Relocation

Lebanese migration is a common occurrence and a topic of both humor (e.g., jokes, humorous experiences of ex-patriates) and lamentation (e.g., about “brain drain,” distant family relations,
and other immigration stressors) among the Lebanese people. Immigration to the United States is documented as far back as 1880. Since the 1970s, many emigrated to escape the civil war. More recent migration patterns have been in pursuit of education and work opportunities.

Within Lebanon there is also much relocation. Lebanon is a mountainous country, and commonly individuals who are natives to villages in the mountains typically commute or relocate to cities for work and other opportunities.

**Language**

Arabic is the official language of Lebanon. However, since Lebanon was under a French mandate, French remains a common second language. It is common in Lebanese culture to code-switch seamlessly between Arabic and one or both of English and French. In fact, it is not uncommon for Lebanese nationals to speak among each other in mostly French or English and to interject Arabic words occasionally. It is also conceivable for Lebanese patients to prefer being tested in English or French rather than in Arabic.

About 4% of the Lebanese population consists of individuals of Armenian heritage. As such, some Armenian Lebanese nationals may be monolingual in Armenian, or multilingual in Arabic and Armenian, in addition to English and/or French.

Arabic itself is a complex language. This has been elaborated on in the Arabic overview chapter of this book. Suffice to mention here that spoken Arabic (“mahkiyeh”) even differs between Arabic regions sometimes to the point that an Arabic speaker from one Arab country may not understand an Arabic speaker from another Arab country. The unifying language is Classic Arabic (“fus-ha”), an old version of Arabic that is used mostly in writing but which is archaic and therefore not very familiar to all Arabic speakers. A more accessible version of a unifying Arabic dialect is the Modern Standard Arabic (MSA), which was created as an attempt to provide a common dialect with which different Arabic speakers can communicate. MSA is commonly used in professional settings including newscasts, speeches, psychological tests, and other writings.

**Communication**

The most observable characteristic of Lebanese communication is that Lebanese individuals are often bilingual or multilingual, as discussed above. Lebanese individuals also typically use emphatic and animated gestures and intonations. Further, it is not unusual in a group discussion for individuals to talk over each other or to speak simultaneously. An individual not familiar with such communication patterns may misinterpret them as hostile or impolite, when in fact they are culturally acceptable.

**Education**

The Lebanese education system has three main streams or curricula into which students enter as early as Kindergarten. The English stream/curriculum is where students are entered into schools where English is taught alongside Arabic. For example, in middle school Math and Sciences may be taught from English texts printed in the United States. The French stream/curriculum is where students are entered into schools where French is taught alongside Arabic. Finally, the Arabic stream/curriculum is where students are primarily taught in Arabic but with some subjects taught in English or French. In all cases, there is typically a “second” language (actually, a third language for the English and the French curricula) introduced usually in middle school. As such, it is very common for Lebanese nationals to be bilingual. It is also conceivable for Lebanese patients to prefer being tested in English or French rather than in Arabic.
Literacy

According to the CIA Factbook, Lebanon’s literacy rate is 96.9% for males and 93.3% for females.²

Values and Customs

Lebanese individuals have a wide variety of values and customs. For expatriates and immigrants, these can be influenced by countries of origin as well as country of residence. Even within Lebanon, the intra-cultural differences are varied. As such, while the psychologist may be prepared with knowledge about possible cultural scenarios to be aware of (e.g., being aware of patriarchal influences), the examiner cannot predict ahead of time (prejudge) what the patient’s cultural values and customs will be. Further, as is the case with immigrants from any country, one can find different levels of acculturation, and therefore different levels of American values and customs, among the Lebanese immigrants and their subsequent generations.

Lebanon is a diverse culture, influenced by Arab as well as European values and customs, and by Muslim as well as Christian beliefs and practices. This makes it difficult for the clinician to predict the level of conservatism of a Lebanese patient’s values ahead of time.

Some values and customs that may sometimes, but not always, exist with Lebanese patients fall under themes of patriarchy, interaction between individuals of the opposite sex, mental/cognitive illness taboos, family unity, and filial piety.

Regarding patriarchy, in some families and cultures, men may take the lead in speaking. Therefore, if the patient is a female, a male in the room such as a spouse or a son may interrupt her, respond before she has the time to respond, or even speak on her behalf. It would behoove the psychologist to find ways of obtaining the female patient’s report in a safe and culturally sensitive manner (for example, during face-to-face testing in private).

Regarding interaction with the opposite sex, in some families and cultures, interactions between non-family members of differing sex must adhere to some rules. For example, some individuals avoid shaking hands with members of a different sex. Therefore, a safe way to interact with a patient of a different sex whom you are meeting for the first time would be to not extend your hand for shaking unless the patient extends theirs first. In some families, it is taboo for two individuals of differing sexes to be alone in a closed room. The clinician may want to check with the patient, if the patient and the clinician are of differing sexes and are to be in an office space alone, if the patient is comfortable with the door being closed.

In Lebanon and the Arab world as a whole, there is significant taboo associated with mental illness or any perception of mental infirmity. Often, matters of mental illness are discussed in terms of blood pressure (“daghet”), risk of a stroke (“jalta”), or of a heart attack (“bil alib”), or other supposed health sequelae of stress and low mood. Typically, Lebanese individuals are more comfortable, or less embarrassed, to suffer from physical ailment than mental illness.

Regarding family unity, family is regarded with high respect in the Lebanese culture. Family usually includes extended members, typically parents, grandparents, uncles, aunts, cousins, and beyond. Family ties are to be maintained and protected, and family members are to support and stand behind each other before other affiliations. Further, it is frowned upon to speak ill of one’s family members in public. This level of affiliation can impede access to mental health care, as individual and family struggles are expected to be kept in the family.

Finally, filial piety, the practice of “being good to one’s elders” including caring for one’s elders, is a common cultural norm. This coincides with deference and respect toward one’s elders such that caring for a parent is generally considered a sign of respect and virtuous duty, and not condescension.
A note of caution is warranted here. The above cultural considerations are just that, considerations. They are not always relevant or applicable to every Lebanese patient. As such, a prudent approach would be that prejudgment is not advised, but awareness is.

**Spirituality and Religion**

There are 18 religious sects recognized in Lebanon, primarily of Muslim and Christian origin. There is a significant minority of Druze (about 5%), a religious affiliation present primarily in Lebanon and Syria. As such, the Lebanese culture is influenced by a wide variety of religious and spiritual beliefs and customs. Further, any individual identifying with a specific religious sect may or may not be observant of that sect’s customs and values. Again, prejudgment is not advised but awareness is.

**Health Status**

According to a WHO 2019–2023 Country Cooperation Strategy report, more than 85% of the healthcare services in Lebanon are provided in the private sector, and good high-quality services are available in the major cities, but rural areas are underserved. According to this WHO report, two-thirds of the Lebanese population suffer from overweight/obesity, half lack low physical activity, and one-third smoke. As such, one can imagine that the burden of vascular risk factors, such as vascular cognitive impairment, can present as a real risk among the Lebanese population.

**Mental Health Views**

In a 2015 report, The World Health Organization (WHO) indicated that there were 42 mental health outpatient facilities and five mental health hospitals and eight community-based psychiatric inpatient units in Lebanon. According to the WHO (2015) report, the most commonly assigned diagnosis in mental hospitals was schizophrenia, and the most commonly assigned diagnosis in outpatient facilities and inpatient units was mood disorders. One epidemiological study showed the lifetime prevalence rate of a DSM-IV mental disorder in Lebanon was 25.8%, with the highest prevalence for anxiety disorders (16.7%) followed by mood disorders (12.6%). According to a WHO 2019–2023 Country Cooperation Strategy—At A Glance 2018 report, mental health conditions, especially post-traumatic stress disorder, depression, and anxiety, were on the rise. This is not surprising since the history of Lebanon is characterized by decades of political turmoil, raising the risks for individual and inter-generational trauma.

There is no specific allocation in the public/governmental health expenditure for mental health services. The WHO estimated that 78% of the Lebanese population had free access to essential psychotropic medications but that psychotherapy interventions were not covered by social insurance plans and majority of private insurances did not cover mental health care. As such, due to limited mental health coverage by insurance plans, lack of affordability can present an obstacle to mental health access in Lebanon.

Other factors also compromise access to mental health care. Mental illness has a significant taboo attached to it in Lebanon. As Hilal and Soufia noted, “the effect of stigma on people with mental illness is more burdensing than the disease itself” and concluded that “the lack of effective mental health awareness is the main reason that leads to negative attitudes” in their sample of respondents. Further, according to the WHO 2019–2023 report, there is a lack of mental health training among primary care workers, and “interactions between the primary care and mental health systems are rare.” However, anecdotally, there are efforts by mental health providers,
through social media and other campaigns, to provide education about mental illness, provide resources for help, and de-stigmatize mental illness.

**Approach to Neuropsychological Evaluations**

One of the early considerations before identifying a test list for the Lebanese (and in general, Arabic-speaking) examinee is to consider the examinee's proficiency with, and preference for, non-Arabic languages. As mentioned earlier, in several Arab countries, a second language, typically English or French, is taught and emphasized at home and in school from a very early age. It is common practice in Lebanon for examinees to be examined in a second language (typically English or French) in addition to, or instead of, in Arabic.

There exist Lebanese institutions, such as universities (e.g., American University of Beirut, Lebanese University) and medical clinics (e.g., Medical Institute for Neuropsychological Disorders) where clinical neuropsychology is practiced and where neuropsychological research is burgeoning. In those clinics, it is typical practice to test in more than one language. One particular example stands out for the test of Trail Making. Some Arab individuals are much more familiar with the alphabet sequence in English or French (same sequence in both languages) than the alphabet sequence in Arabic. As such, an Arabic-speaking examinee may have an easier time completing the Trails B test in English than in Arabic.

Beyond multilingualism, as noted, the Arabic language itself comes in different dialects. As such, test instructions written in one Arabic dialect may not be well understood by speakers of a different Arabic dialect. Further, a stimulus word (e.g., on a word-list learning test) in one Arabic dialect may be understood but still not carry the same level of familiarity for an examinee who speaks a different Arabic dialect. Therefore, even a verbal test translated to one Arabic dialect may not be applicable to an examinee of a different Arabic dialect.

Another consideration is the use of non-Arabic terms in the Arabic language. For example, the word for “computer” in Arabic is transliterated to “hasoub.” The word “hasoub” can be used, and technically is used, to refer to a computer. However, most Arabic speakers, even when speaking Arabic, would not refer to a computer as “hasoub” but would instead simply use the word “computer.” As such, when developing instructions and test materials (e.g., word-list for memorization, object-naming test, vocabulary test), one needs to consider which word would be most appropriate.

Broadly speaking, there is not one Arabic language, and there is not one Arabic culture. As such, when consulting with examiners evaluating Arabic-speaking examinees, I often caution them that they would want to ensure that the examinee’s Arabic dialect and culture is consistent with the dialect and culture of the Arabic tests they are using (or, alternatively, of the interpreter upon whom they are relying).

As a consequence of these obstacles, there is a significant paucity of Arabic neuropsychological tests available for clinical use. The reader is referred to the review article by Zeinoun, Iliescu, and El Hakim (2021) for a listing of available tests.

Given the many levels of considerations that neuropsychologists would have to attend to before even getting to the point of choosing a testing battery for their Arab examinee, it would behoove the neuropsychologists to recognize that they are a clinician with several clinical tools and that the neuropsychological tests represent only one of those tools. When examining an Arabic-speaking examinee, reliance on a detailed clinical history, collateral information, mental status examination, behavioral observations, review of records, and an understanding of functional neuroanatomy and neuropsychological manifestations of different medical and mental health conditions becomes particularly invaluable.

In the case study presented here, a case of dementia in a Lebanese examinee is presented. The case was chosen purposefully predating the publication of normative data for a Lebanese
dementia screening battery. The purpose for that choice was to keep in line with the goal of walking through the more typical scenario of having an Arabic-speaking examinee while the examiner has a very limited choice of Arabic tests to administer.

Section II: Case Study — “No Test in Sight, and One Language Won’t Suffice”

Note: Possible identifying information and several aspects of history and presentation have been changed to protect patient identity and privacy.

Reason for Referral
Ms. A is a 78-year-old female who was referred to this examiner for a dementia evaluation. She reported that Arabic was her primary language, and she was fluent in French but spoke very little English.

History of Presenting Illness
Ms. A did not believe that she had any cognitive problems and felt indignant that her family was suggesting that she was “kharfaneh” (senile) by asking her to have her mental skills evaluated. Ms. A had been living with her husband, who passed away two years prior to the evaluation. After her husband passed away, Ms. A continued to live on her own. Due to language barriers, however, her son and her daughter-in-law (who lived nearby) helped her out with more complex tasks such as filling out paperwork or paying bills. In the past year, Ms. A’s family members started noticing her forgetting things. For example, they would alert her to an upcoming doctor’s appointment, and when they showed up to pick her up she was oblivious to having any appointments. They reported that she would repeat her questions to them sometimes. Her family members denied any decline in Ms. A’s judgment, reasoning, problem-solving, or visual-spatial perception. They noted that she sometimes paused for words but denied that this interfered with her ability to communicate. She was able to take her medications accurately every morning. She was able to drive to her already restricted routes, mostly to the grocery store and to her son’s home nearby. She was described as having been a “phenomenal” cook, but recently her cooking had declined in quality.

The family had brought up the concern about Ms. A’s forgetfulness to her primary care physician, who in turn ordered a brain MRI scan and referred her for neuropsychological testing with this examiner. The brain MRI was interpreted by the radiologist to show mild volume loss that was believed to be consistent with her age. There was mention of white matter degradation, but no opinion was given about the level of severity/abnormality of this degradation.

At this point, her son and daughter-in-law were considering having Ms. A move in with them, but they had not broached the subject with her.

Other Pertinent History
Ms. A was born, raised, and educated in Beirut, the cosmopolitan capital of Lebanon. She immigrated to the United States from Lebanon at the age of 64, on the behest of her three children, who all lived in the United States. In Lebanon, she graduated high school and later married at the age of 21. She denied any difficulty learning in school. She was a full-time homemaker and mother of three children. While she picked up some English during her almost 14 years living in the United States, for the most part she spoke Arabic and French in her community.

Ms. A’s health history was significant for high cholesterol, high blood pressure, and osteoporosis, all of which were kept under control with medications. Her medication list consisted of
atorvastatin, alendronate, losartan, and over-the-counter pain medications. A blood workup from three months prior did not reveal any abnormal findings pertinent to the cognitive complaints (e.g., vitamin deficiency, thyroid dysfunction).

There were no complaints about sleep, appetite, or eating habits in general. However, Ms. A lived alone, and so no one observed her sleeping. There was no chronic history of depression or anxiety or any other mental health complaints. While Ms. A reported that she missed her deceased husband, she reported generally being in good spirits and feeling happy to have her family and grandchildren around her. She reported feeling satisfied with her life and ready to join with her husband in the afterlife; however, she vehemently denied any suicidal thoughts.

Ms. A did not have much of a social circle except for her family and a very small and dwindling circle of Arabic-speaking friends. She did not engage in any formal exercise. She enjoyed reading and knitting and watching television. She denied using any alcohol or drugs. She used to smoke about one pack of cigarettes per day between the age of 17 and 24 (she quit smoking when she first became pregnant).

Regarding family history, Ms. A’s father passed away in his 50’s from heart problems, and her mother passed away at age 74 from “old age.” She and her children did not know of any history of dementia or cognitive decline in the family.

**Cultural Notes**

Ms. A came from an affluent family that stressed academic achievement. Her father was a politician, and her mother was a housewife whom Ms. A described as a socialite. Ms. A’s son reported that his grandmother (Ms. A’s mother) was a “formidable” “matriarch.” He described his mother as being the same. Ms. A’s son described that even though in Lebanese culture the children are expected to care for their parents, he described his mother as “prideful,” “secretive,” and “stubborn,” and she refused help. This was valuable information that prompted me to decide to interview Ms. A in private, in order to provide her a more confidential space and hopefully provide her a safer space to be vulnerable.

Ms. A’s son also reported that his mother adhered to certain rules of conduct, such as wearing a headscarf (“hijab”) in public and not shaking men’s hands. This was valuable to know as a male examiner so that during my examination of Ms. A, I made sure not to accidentally make physical contact with her (e.g., when passing papers or other materials back and forth with her).

Ms. A expressed being comfortable with meeting with me, in a private room, alone, with the door shut.

**Mental Status Examination**

Ms. A presented as alert and aware of the reason for her examination today. Since she had to travel from her hometown about 150 miles away from this examiner’s office location, Ms. A did not know exactly what city we were in. However, she was able to provide her address, and she knew that she was still in the same state as where she resided, and she knew the present month and year but not the date. She happily provided detailed information about her distant past. However, when asked about more recent events in her life she hesitated and generally gave vague information. With Ms. A’s permission, I interviewed her son and daughter-in-law to obtain a more detailed recent history. Ms. A was able to express herself fluently and did not evidence any significant problems with word finding. There were no deficits noted in her comprehension. She occasionally interjected some French words but mostly spoke in Arabic. She was able to attend to conversations. Her thought process was clear and coherent and logical. Her mood was euthymic. Her affect ranged appropriately. While
she was quite respectful and pleasant, it was clear that she was not happy to have her mental skills evaluated. She was nevertheless able to build rapport easily, and she enjoyed reminiscing about her home country. There were no signs of psychosis. There were no signs of disinhibition or impulsivity.

**Neuropsychological Testing**

At the time of the present evaluation, the examiner was only aware of two neuropsychological screening instruments that were validated with Arabic-speaking populations, the modified version of the Mini-Mental Status Examination (3MS\textsuperscript{11}) and the Montreal Cognitive Assessment (MoCA\textsuperscript{12}). I administered the Arabic version of the MoCA to Ms. A.

The following tests were then used. The tests were chosen for the cognitive domain they survey and for the ease of their translation. Unless noted otherwise, the test instructions were provided in Arabic and with test stimuli translated to Arabic when needed:

- Wechsler Adult Intelligence Scale-4th Edition (WAIS-IV) Digit Span\textsuperscript{13}
- Arabic version of the Rey Auditory Verbal Learning Test-Revised.\textsuperscript{14} This Arabic version of the AVLT already exists but has only been validated with younger adults.
- Brief Visuospatial Memory Test-Revised.\textsuperscript{15} Norms only available for young adult Arabic speakers.
- Benton Judgment of Line Orientation.\textsuperscript{16} No norms for Arabic speakers.
- Rey-O Complex Figure Test.\textsuperscript{17} Norms only available for young adult Arabic speakers.
- Trail Making Test, original English version.\textsuperscript{18} Ms. A reported that she was more fluent with the sequence of the alphabet in French (same as English) than she was with the alphabet sequence in Arabic. As such, the original English version of the Trail Making Test was administered.
- Arabic version of Phonemic Fluency and Semantic Fluency tests.\textsuperscript{19} Ms. A verbalized a preference for performing this test in Arabic rather than in French. Arabic norms were only available for young adult Arabic speakers.
- Arabic version of the Beck Depression Inventory-II.\textsuperscript{20} Out of cultural sensitivity, I typically exclude the question about sexual interest, particularly with female examinees.

Test results were as follows.

**Montreal Cognitive Assessment (MoCA)**

- Trails: 1/1
- Cube: 0/1
- Clock: 2/3
- Naming: 2/3
- List Learning: –
- Digit Span: 2/2
- Letter Vigilance: 1/1
- Serial Subtraction: 2/3
- Sentence Repetition: 1/2
- Abstraction: 2/2
- Delayed Recall: 1/5
- Orientation: 3/5
- Total: 17/30 (Education-Corrected score = 18/30)
Overall, a total score of 18/30 was interpreted as a “red flag” signaling possible cognitive impairment. There are no norms for Arabic-speaking examinees on the MoCA. Further, score equivalencies from English examiners cannot be assumed. However, a qualitative examination of her performances suggested memory problems. For example, she learned four words but recalled only one and recognized only two, and her orientation was inaccurate. There were equivocal signs of executive functioning problems as well, on clock drawing and serial subtraction. Her language scores were less relevant as I tend to take a conservative approach to minimize false-positive errors when interpreting performance on Arabic translated language tests that are not robustly validated and normed.

Attention/Executive

Table 10.1 outlines Ms. A’s attention/executive functioning test raw scores.

Ms. A’s attention span score on the Digit Span forward appeared good, compared to English-speaking samples (age-matched manual-based norms). Her backward span, again compared to English-speaking samples, based on the manual norms, was significantly lower. In isolation, her backward span performance may not necessarily be interpreted to reflect a deficit. However, when one considers the difference between her forward and her backward span, it would not be unreasonable to propose that there is a red flag signaling possible impairment in the cognitive domain measured by the backward span subtest.

On Trails A, Ms. A again scored favorably against similarly aged American normative samples (e.g., Mayo Older American Normative Study (MOANS), 63rd percentile).

On Trails B, Ms. A’s speed, again compared against the MOANS sample, fell at the 5th percentile. Considering how quickly she completed the Trails A test, this score reflects a possible decline in the cognitive domain measured by Trails B. Further, she made 2 errors (lost set) on the test but was able to recover and get back on track.

On clock drawing from the MoCA, Ms. A was able to draw the contour of the cock, set the numbers appropriately, set the hour hand appropriately, but she set the minutes hands inaccurately (pointing to the number 10).

Overall, for each individual task above, and in the absence of validated norms, Ms. A’s performance on each test cannot be interpreted in isolation. However, when all the tests are taken into consideration, in light of her intact performances on simpler tasks such as Forward Digit Span and Trails A, one sees that a trend emerges whereby Ms. A struggled with tasks that required higher levels of set-shifting, longer duration of focus and self-tracking, and complex amounts of multi-processing. A conclusion, in this clinical context, may be made that Ms. A exhibited likely declines in executive functioning.

<table>
<thead>
<tr>
<th>Test</th>
<th>Raw score</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAIS-IV Digit Span Forward</td>
<td>11</td>
</tr>
<tr>
<td>WAIS-IV Digit Span Backward</td>
<td>6</td>
</tr>
<tr>
<td>Trails A</td>
<td>39 seconds</td>
</tr>
<tr>
<td>Trails B</td>
<td>238 seconds, 2 errors</td>
</tr>
<tr>
<td>MoCA Trails</td>
<td>1/1</td>
</tr>
<tr>
<td>MoCA Clock</td>
<td>2/3 set the minute hand incorrectly</td>
</tr>
</tbody>
</table>
Visual/Spatial

Table 10.2 outlines Ms. A's visual/spatial test raw scores.

<table>
<thead>
<tr>
<th>Test</th>
<th>Raw score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVMT-R Copy</td>
<td>12/12</td>
</tr>
<tr>
<td>Benton Judgment of Line Orientation</td>
<td>20/30</td>
</tr>
<tr>
<td>Rey-O Complex Figure Test</td>
<td>12/36</td>
</tr>
<tr>
<td>MoCA Cube Copy</td>
<td>0</td>
</tr>
</tbody>
</table>

Ms. A was able to copy the relatively simple diagrams on the BVMT-R without error. Her judgment of line angulation score, when compared against similarly aged American samples (MOANS sample), did not raise significant concern about a problem with her visual-spatial perception. However, her copy of more complex diagrams, such as a cube and the Rey-O Complex Figure, were comparatively problematic. In light of her executive functioning findings so far, this examiner believes that her difficulties with the cube and with the complex figure further point to the hypothesis that Ms. A likely has executive functioning declines (e.g., organization, planning).

Language

Table 10.3 outlines Ms. A's language test raw scores.

<table>
<thead>
<tr>
<th>Test</th>
<th>Raw Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter fluency (3 letters total)</td>
<td>24</td>
</tr>
<tr>
<td>Animal fluency</td>
<td>11</td>
</tr>
</tbody>
</table>

This examiner found that Ms. A's scores on word generation exercises were too equivocal and borderline to be interpreted clinically as either reflecting normal functioning or reflecting abnormal functioning.

Learning/Memory

Table 10.4 outlines Ms. A's learning/memory test raw scores.

<table>
<thead>
<tr>
<th>Test</th>
<th>Raw score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVMT-R Trials 1–3</td>
<td>1,4,5 = 10</td>
</tr>
<tr>
<td>BVMT-R Learning</td>
<td>4</td>
</tr>
<tr>
<td>BVMT-R Delayed Recall</td>
<td>0</td>
</tr>
<tr>
<td>BVMT-R Recognition Discrimination</td>
<td>3</td>
</tr>
<tr>
<td>Rey AVLT Trials 1–5</td>
<td>2,5,6,6,5 (LOT:14)</td>
</tr>
<tr>
<td>Rey AVLT Trial B</td>
<td>1</td>
</tr>
<tr>
<td>Rey AVLT Trial 6</td>
<td>1</td>
</tr>
<tr>
<td>Rey AVLT Delayed Recall</td>
<td>0</td>
</tr>
<tr>
<td>Rey AVLT Recognition Hits</td>
<td>7</td>
</tr>
<tr>
<td>Rey AVLT Recognition False Positive Errors</td>
<td>0</td>
</tr>
</tbody>
</table>
but an apparent fair ability to memorize over repetition. Her learning curves (BVMT-R Learning and AVLT Learning Over Trials) when compared against similarly aged American normative samples were in the average range (both 50th percentile).

However, after delays with distractions, Ms. A recalled little to none of the information she had originally memorized from the drawings (made a guess that landed her 1 point) or from the list (no words recalled). When asked to recognize the material, she again struggled and made minimal improvements over her recall.

In the absence of relevant normative data, given the qualitative nature of her learning and memory performances detailed here, the examiner made the clinical conclusion that Ms. A exhibited impairment in her ability to retain new information over time.

**Mood**

On the Beck Depression Inventory-Second Edition (Arabic translation), Ms. A scored a total of 3 points, providing 1-point responses to each of the symptoms of decreased energy, increased appetite, and fatigue.

**Case Discussion**

In the absence of culturally relevant normative test data on which to rely for neuropsychological evaluations, the examiner evaluating an Arabic-speaking examinee is not devoid of options. Under certain circumstances, and with the help of a thorough clinical interview and a mental status examination, review of medical records, and reliance on as much reliable data as possible, a clinician may still opt to administer neuropsychological testing in search of quantitative and qualitative data to inform the evaluation. The test results can be interpreted using intra-individual norms (looking at patterns of strengths and weaknesses, comparing analogous tests to each other) and can also be used to establish the individual’s baseline for future evaluations. Ideally, the examiner would first gather as many tests as possible that have been adapted, validated, and normed on Arabic samples similar to the examinee. In the absence of this ideal, the examiner may choose tests that have been adapted and validated for Arabic speakers but that do not provide relevant norms. In addition, the examiner may choose tests that have not necessarily been validated and adapted to Arabic speakers but that have demonstrated minimal cultural and linguistic influence. Finally, the examiner may choose tests that have not been adapted or validated on Arabic examinees but with which the examiner is well familiar and which provide an adequate sampling of the function being tested.

With regards to test selection in the case of Ms. A, In the absence of tests that had been adapted, validated, and normed on older adult Arabic-speaking samples, I still had access to one common test adapted to the Arabic population (MoCA) and several other tests that were easily available, translatable without complexity, and with which the examiner had close familiarity.

With regards to data integration and interpretation in the case of Ms. A, her children’s reports, her medical records (ruling out medical and metabolic causes of subjective cognitive decline), the ruling out of psychological factors contributing to subjective cognitive and functional decline, all raised a significant consideration for the presence of progressive cognitive decline.

After completing her neuropsychological testing, I relied on multiple levels of interpretation of Ms. A’s test performance scores:

1. Deferring conclusions. Where I did not feel comfortable interpreting a test score as either normal or abnormal (for example, scores were equivocal, there was no clear overall pattern), I deferred interpretation of those specific test results.
2. Conclusions based on neuropsychological principles, where test performances followed a convincing neuropsychological pattern. For example, Ms. A’s learning of new information
was adequate, but her delayed recall and recognition were clearly low, thus suggested abnormal forgetting.

3. Conclusions based on normal scores compared against the original English-speaking normative sample. Normative data typically show that interpreting abnormal scores (compared to standard normative samples) in an examinee that is very different from the original normative sample runs the risk of over-pathologizing (false-positive errors) the examinee’s performance. On the other hand, there is no clear indication that normal scores (compared to standard normative samples) lead to under-pathologizing and false negatives. In other words, if the Arabic examinee’s score on an American normed test falls in the normal range when compared to the American normative sample, particularly when there is no reason to suspect that the examinee is impaired in the domain measured by this test, then I typically interpret the Arabic examinee’s score as normal.

After considering the above, I diagnosed Ms. A with Amnestic Mild Cognitive Impairment, with deficits in memory and equivocal deficits in executive functioning.

In terms of recommendations, I discussed the testing results with the family. Ms. A elected to allow her son and daughter-in-law to be present. Her daughter who resided out of state was present via telephone (again, with Ms. A’s permission). Awareness of cultural sensitivities, such as discomfort with mental infirmity (e.g., forgetfulness) and cognitive labels (e.g., “kharaf”—senility or dementia), dictated my choice of language and choice of how to present Ms. A’s symptoms. I was able to invoke cultural practices, such as family unity and filial piety, as permission to engage the family in conversation about the mother’s living arrangements and future planning. Using Arabic as our language of communication hopefully placed Ms. A at some level of ease as she was quite open and engaged in our discussions. The family, as a whole, felt like they had the information they needed to make decisions about support and living arrangements. The referring physician was provided with the test results for treatment planning.

Section III: Lessons Learned

- Conducting evaluations with less-than-adequate tools requires clinical judgment, which in turn requires the acceptance of liberties in interpretation. The context of an examination will likely influence the examiner to determine to what extent clinical judgments and liberties are acceptable or not. For example, a high-stakes evaluation where findings lead to very consequential outcomes may not tolerate as much clinical judgment as lower stakes evaluations.

  Every case has different parameters. A clinician’s options when faced with an examination of an Arabic-speaking individual can be to decline the examination, refer out to another examiner, or undertake the examination using the best clinical tools available.

  The specific information presented in the overview chapter relating to examining Arabic-speaking examinees, combined with principles of cross-cultural examination and considerations for neuropsychological principles of examinations in general can help the clinician make decisions most appropriate to each individual case, to the examinee, and to the clinician.

- I would state an obvious caveat, which is that the above case presentation was used to demonstrate one examiner’s (myself) approach, at one point in the examiner's cultural growth, for one particular case (dementia, clinical non-forensic examination). The above presentation is not made as an example of all examiners or all Arab examinees. It is simply a tool to contribute to discussions about some considerations to keep in mind when evaluating an Arab examinee.
References