Section I: Background Information

Terminology and Perspective

Nigeria is a country located in sub-Saharan Africa with a predominantly Black population of Nigerians. People are known as Nigerians, but by its composition, it is a multi-ethnic country with over 250 indigenous languages and multi-ethnic identification. Nigeria prides herself on the maxim: Unity in Diversity. For ease of communication, the national language is English (British English).

My (VAU) perspective is that of a bilingual, Nigerian trained clinical/counseling psychologist who received additional post-doctoral training at the University of Michigan in Neuropsychology. I teach (undergraduate and post-graduate) and do research at Nnamdi Azikiwe University Awka, which is a public university in southeast (SE) Nigeria. I am engaged in the private practice of clinical psychology and neuropsychological assessment in a suburban town near my university. My practice interest is on assessment and psychotherapy of severe mental disorders and mild cognitive impairment. Due to the nature of the patients that I see, I collaborate with other mental health professionals, particularly psychiatrists and social workers.

BJG is a professor of psychiatry, neurology, psychology, and nursing at the University of Michigan Ann Arbor. He has garnered over four decades of experience in clinical psychology, physiological psychology, and neuropsychology as a researcher, lecturer, and practitioner. He trains and mentors post-doctoral fellows in neuropsychology and was the former head of the Neuropsychology section, Department of Psychiatry, University of Michigan. Presently, Dr. Giordani is the chief psychologist in psychiatry, the associate director of the Michigan Alzheimer's Disease Research Center and senior director of Mary A. Rackham Institute at the University of Michigan. He has done extensive neuropsychology research in Africa and was co-editor of the first book on neuropsychology of children in Africa.1

The below information is provided from the authors’ perspective and their knowledge of Nigeria and her people.

Geography

The Federal Republic of Nigeria is a West African country on the Gulf of Guinea. It is the largest democracy on the continent with estimated population of over 210 million people by 2020 (www.Worldometer.info). Nigeria is made up of 36 states and 6 geo-political zones, based on similar ethnic groups, and/or common political history. Nigeria shares land borders with the Republic of Niger to the north, Chad to the northeast, Cameroon to the east, and Benin to the west. The coastal region is a low-lying area with sandy beaches and mangrove swamps which merge into an

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area of rainforest where palm trees grow to over 30 m (100 ft). From here the landscape changes to
savannah and open woodland, rising to the central Jos Plateau at 1800 m (6000 ft). The northern
part of the country is desert and semi-desert, marking the southern extent of the Sahara.

History

Nigeria in the pre-colonial years was comprised of independent entities existing and surviving
within their regional ethnic spaces. In the eastern part of the country, we have predominantly
Igbo people and other ethnic groups. In the west, we have predominantly the Yoruba ethnic group
while in the north we find the Hausa and the Fulani with other ethnic minorities. Before coloniza-
tion, people were governed by kings and traditional rulers including the Ezes (for the Igbos), Obas
(for the Yorubas), and Emirs (for the Hausas/Fulanis). In pre-colonial days, Nigeria was governed
via protectors. The colonizers divided the country into northern and southern protectorates
with various systems of governance depending on the behavior of the protectorate. In the south-
ern protectorate, the eastern part is governed through indirect rule and the use of warrant chiefs.
Because of the political interests of her colonial rulers, Nigeria in 1914 was amalgamated, thereby
joining the southern and northern protectorates to become one Nigeria. As some individuals will
argue, the amalgamation was not in the interest of the people as they were not consulted before
the amalgamation. Some argue that the culture and historical origins of the two protectorates did
not warrant amalgamation. To some extent this appears to be true as there are many agitations
from various regions in the country for outright break away from Nigeria. The most recent is the
agitation from the Indigenous People of Biafra (IPOB) for an independent nation-state.²

Nigeria had her independence from British colonial rulers in 1960 followed by post-independ-
ence civil war in 1967 (between the then old Eastern region and the rest of the country) that lasted
for three years. Many agitators (like the IPOB and other) from different regions of the country are
of the opinion that the reasons for the civil war have not been resolved. Post-civil war, the country
has been ruled by the military with coups and counter coups that have devastated the country
socio-economically and psychologically. Currently, Nigeria is running a democratic system of
governance. To some extent Nigeria is more divided across ethnic polarities that negatively affect
social behaviors including group to group and person to person interactions across ethnic lines.

People

The case presented in this chapter is that of a male from the Igbo-speaking part of Nigeria, spe-
cifically SE Nigeria. Aside from the Igbo ethnic group, Nigeria has other ethnic groups including
the Hausa, Yoruba, Ibibio, Itsekiris, Ijaws, etc. However, there are three major ethnic groups in
Nigeria: Igbo, Hausa, and Yoruba. For the purpose of this chapter, the following background
information will focus on the Igbo ethnic community.

The SE Nigerians are known by other regions of the country for hard work and diligence.
They are predominantly entrepreneurs and can be found all over the country. The nature of their
entrepreneurialism begins with apprenticeship after 12 years of education. Apprenticeship in this
situation is synonymous to mentoring whereby the apprentice spends five to six years learning
a particular trade under a mentor who has been in the business for a given number of years. It
is expected that after a period of apprenticeship, the trainee will be given some funds and other
social supports by the master and members of the trainee’s family to start his own business. This
opportunity is not gender specific, although career choice and selection is, to a large extent, gen-
der related. There are businesses that are taken as male related while there are others that are
taken as female related.
Immigration and Relocation

The SE people of Nigeria are known for migration and relocation from their ancestral homes for business-related opportunities. One remarkable thing about this group of Nigerians is their inherent capacity to adapt to their new environments and contribute immensely to building their host environment. The SE people have the culture of returning to their ancestral homes once every year, particularly during Christmas time to reunite with their kinsmen.

Language and Communication

The SE people of Nigeria have a traditional language known as the Igbo language. The remarkable thing about the Igbo language is its variants in dialects within the language. This means that among the Igbo-speaking people, there are different forms of dialects with one dialect central among them all. Communication within the region is through the central dialect, although individuals from a given area within the region communicate together in their own form of dialect. Nigeria, because of its multi-ethnic nature, adopted the English language (the language of her colonial rulers) as their formal means of communication. The SE people, like other Nigerians from other regions of the country, have an elementary knowledge of the English language to enable them to communicate with people from other regions of the country. There are times when interpreters may be needed particularly during psychological and neuropsychological assessment. There are some English words that a client with six years of education may not be able to understand if it was not interpreted in the client’s local language.

Education

Nigeria runs a 6-6-4 system of education that includes six years of primary education, six years of secondary school education (three years of junior secondary and three years of senior secondary), and four years of tertiary education. The government has a standing mandate that all Nigerian children have at least nine years of education (six years primary and three years junior secondary) and in line with that has made level of education free for all citizens. The SE people are known to attend a minimum of nine years of education before starting apprenticeship. Generally, people from low socio-economic strata strive to finish 9 to 12 years of education before going to learn a trade. Children with behavior problems or low sufficient intellectual endowment may have significant difficulty in education and often complete only the sixth or ninth year of education. The literacy rate in Nigeria is improving due to government insistence on nine years minimum education. There is rise in university education secondary to the increase in private universities, part-time university education, and government subsidies to public universities to help citizens afford university education.

Socio-Economic Status

Compared to other regions of Nigeria, the poverty rate appears lower in SE part of Nigeria (https://zerofy.ng/poorest-tribes/). This is attributed to their love for trade, an entrepreneurial spirit, and independent minds. Although Nigerian society tends to be highly egalitarian and collectivistic, the SE people, considering that trait, have a high level of independence and motivation for success when compared with other regions of the country. Among Nigerians, the people of the SE are more successful, particularly in business.

Values and Customs

The SE Nigerians attach strong values to family, kinship, marriage, morality, and life. They view life as sacred and can only be given and taken by God. They have strong family values and take
maintaining family relationships very seriously. They have strong beliefs in a kinship system and practice a patriarchal family system. They value and maintain their lineage and ancestral heritages and practices.

**Gender and Sexuality**

The SE, and indeed all of Nigeria, are a male-oriented society, although gender equality is recently gaining attention. The male is believed to be and seen as the head of the family and takes significant responsibility for the security and upkeep of the family. Traditionally, it is the males that pay dowry for marriage, and expectations are that the woman in return changes her name to that of the groom's family. People are always expected to dress decently and not to give an impression of promiscuity in dress. Same-sex relationships and marriages are seen as taboo in SE and are not allowed by law in Nigeria. Sexual minorities tend to do so in secret to avoid public stigma, rejection, and punishment. Sexual discussions and sex education were not common during the examinee's childhood. Children and adolescents rarely talk or ask questions about genitals and sexual issues with parents although they may secretly discuss with peers. Although, recently in Nigeria, there are rising efforts to promote sex education.

**Spirituality and Religion**

The Igbo people of Nigeria are very religious and believe very much in the existence of spirits and life after death. There are various totems and deities that are worshipped and or venerated in the Igbo land, and people believe that such gods determine their survival in life and in the world beyond. The people's religion is tied to their day-to-day lives and reflected in the names they give their children.

With the advent of Christianity, a majority of the people from the SE were converted to Christianity. It has been over a century and half since the Christian religion came into the region. Christianity has flourished in the SE (https://en.wikipedia.org/wiki/Christianity_in_Nigeria) such that pastors are all indigenous and are also moving out to other parts of the world for evangelism. However, one also observes that in spite of adherence to Christianity, SE people also carry along with them the traces of their traditional religion and always find a way to reconcile it with their Christian beliefs. For example, SE people believe in reincarnation, influence of the dead on the living, and spirit possession. To a significant extent, the Christians of SE region believe that the cause of their problems is spiritual and more or less man-made. A typical SE person is more likely to believe that the cause of his/her child's psychotic reactions is evil eyes cast upon the family by an enemy. In that case, they inadvertently ignore the science behind the sickness. This belief will significantly affect a family's solution for the problem. They are more likely to look for an exorcist in the Christian religion to help cast away the evil spirit or consult a traditional witch doctor or healer to help with the problem.

**Mental Health Views**

There are misconceptions about mental health in Nigeria, predominately characterized by the notion that mental health issues are the result of evil spirit possession and can be treated with prayers and or by a traditional way of exorcism. Even when a person is taken to the hospital, the family is still in dissonance as to whether orthodox management will help. Particularly in dementia and psychosis, patients are misunderstood and sometimes misdiagnosed. When patients are misunderstood and family perceives their behavior as intentional, they are often treated harshly. There is present awareness and efforts by professional bodies to encourage people to understand that mental illness is another physical illness, and that patients should be understood and loved.
Approaches to Neuropsychological Assessment in Nigeria

Neuropsychological assessment is a nascent area in Nigeria. There is no post-graduate training that has neuropsychology as a separate area of study. Some limited aspects of brain influence on behavior are taught in clinical psychology programs at masters and doctoral levels. Overall, clinical psychologists in Nigeria test for brain dysfunction during their psychological assessment. The main aim of this evaluation is to determine the extent to which presenting psychiatric behaviors or symptoms have an organic origin. Predominantly, the Bender Visual Motor Gestalt Test (BVMGT) and the Mini Mental Status Examination (MMSE) are used as initial tests of organicity during psychiatric assessment in Nigeria. The scope of neuropsychology is otherwise just emerging.

Section II: Case Study — “I Am Ok, It's Just That I Cannot Concentrate or Learn What You Are Teaching”

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

Behavioral Observations

Chidi (male, 41 years old) came to a community rehabilitation center at the insistence of his outpatient psychiatrist who had been seeing him for over 18 months. The referral was for inpatient cognitive and emotional rehabilitation of schizophrenic symptoms, medication management, and neuropsychological evaluation due to treatment resistance.

Chidi was neatly dressed, except that the side beards were not shaved. He came in the company of the elder sister and his brother-in-law. In severe psychiatric cases, patients are accompanied by their relatives who will be able to give a detailed history of the patient and sit in for the patient’s psychiatric admission. Upon arrival to the center, he was restless, pacing within the waiting room and was asking his sister what to do and when to see the doctor. On entering the consulting room, he was very quick to greet the doctor (VAU) and try to initiate rapport. Overall, his behavior suggested an anxious disposition and uncertainty. This was understandable, as his psychiatrist had told him and the family that he would be admitted to the center for behavioral rehabilitation. This clinical decision did not go down well with Chidi, and he was hoping that the clinicians at the rehabilitation center would not find him so distressed to be admitted. In Nigeria, the family of a severely psychiatrically impaired patient makes the decision for hospitalization, particularly if the person is judged as incapable of making sound decisions. This was the situation in which Chidi found himself, and he felt he was at the mercy of the clinicians at the rehabilitation center to determine if he would be admitted for treatment or would go back to his home to continue outpatient treatment with his psychiatrist.

The first meeting with Chidi and his family was an initial therapeutic interview. Here I (VAU) discussed with Chidi and his family the presenting concerns, the report from the psychiatrist, as well as the family report. Using motivational interviewing and insight-oriented techniques of interviewing, Chidi became convinced of the need to stay in the rehabilitation center to work on the emotional and behavioral concerns presented by the family and the attending psychiatrist. At the end of the 1-hour interview, Chidi agreed to rehabilitation for one month.

Presenting Concerns

Chidi presented with severe auditory hallucinations and somatic and persecutory delusions. He said he heard voices talking to him from Zimbabwe and that his late mother talked to him at times. He believed that he was an Angel of God and that he had powers to heal. Many times, he replied...
to the voices that were talking to him, as if they heard him. Chidi always complained that he found it hard to understand complex discussions and alleged that someone removed something from his body and that was the cause of his inattention and inability to understand. Chidi was sent to Onitsha in Anambra state to learn a trade after his secondary school education. Often, he accused the master of removing glomerulus from his body and that the removal of the glomerulus made his penis very small and that no woman would marry him. He also alleged that the removal of the glomerulus was the origin of his mental confusion. Although it was somehow clear to Chidi that his behavior was not normal, he believed firmly in the reality of the voices he heard and his delusions, including the belief that some people were after him and wanted to take his destiny or good luck.

**Daily Functioning**

Chidi performed fairly well in activities of daily living (ADL), but poorly in instrumental ADL. For example, he could wash his clothes, take his bath, and manage money to buy things from the grocery store for his upkeep. However, he found it very difficult to keep his room clean and attend to daily routines without further prompting and could not manage his bills. He was always occupied with thoughts and voices coming to his mind and could respond to the voices for close to six hours without stopping. Due to this, he was incapacitated for daily events and was not able to hold a job. He was not able to manage his psychiatric medications as prescribed by his psychiatrist, making adherence very poor. He could become very aggressive with his family members, particularly when his delusion and hallucinations were challenged.

**Health History**

Chidi's family denied any problems with his birth and early development. However, they noted that he was impulsive in behavior while growing up as a teenager. Chidi further reported no physical ailments, even now as an adult other than periodic malaria, which he treated with anti-malarial medicine, as many Nigerians do. He denied ever being diagnosed with cerebral or acute malaria that required hospitalization. His malaria as the patient reported was mild and lasted two to four days. His most recent physical examination and blood work ordered by his psychiatrist were unremarkable. He had no history of smoking, drinking, or other forms of drug abuse.

Chidi was involved in a serious physical fight three years prior to seeing the psychiatrist that left him with some bruises on his body. Chidi has been manifesting symptoms since his secondary school completion. The fight was a result of his brother challenging his delusion. After the fight, they had to send him back to Nigeria from Zimbabwe (because of their inability to manage his delusions). Family medical history was remarkable for two of his elder brothers being diagnosed with schizophrenia and manic disorder, respectively, prior to Chidi developing his symptoms.

**Educational History**

Chidi completed 12 years of education in Nigeria, meaning that he had completed primary and secondary school education and had passed the senior secondary certificate examination by the West African Examination Council. He was an average student during his primary and secondary school days and had not repeated any class. He attempted entrance examination into university but was not successful because his score did not reach the university entrance point. According to Chidi, he was not able to pass the entrance examination organized by the Joint Admission and Matriculation Board at two sittings, and so decided to go for apprentice to learn shoe trading instead.
**Language Proficiency**

Chidi is bilingual and speaks Igbo and English languages fluently. He first acquired Igbo language, because that was the mother tongue learned through his family prior to starting formal education. For Nigerians, English is acquired when formal education is started in kindergarten. English was the vehicle of communication in Nigerian schools and so Chidi was also proficient in the English language and sat for his final exam in the secondary school. When asked about his fluency in the language, he said he had better proficiency in speaking and understanding Igbo language, but better proficiency in writing in English. It was clear that Chidi’s dominant language was Igbo, followed by English and then Ndebele. His English language proficiency was sufficient to match education and age-based expectations of available English-based neuropsychological test measures to be administered. He expressed a preference for testing in English and further explanation in Igbo language when the need arose. This approach to use a language combination in both English and Igbo languages was the most accurate way to ensure that the testing captured his current cognitive status.

**Cultural and Personal History**

Chidi came from a monogamous family and was the last of eight children (five boys and three girls) born into a Catholic family in SE Nigeria. Chidi lived with his parents and siblings while growing up in an urban area 20 km from their native village. Consistent with the Igbos of Nigeria, they combined traditional beliefs with Christian doctrine. Prior to the coming of the missionaries, the people had their beliefs and conceptions about God and existence. Even after accepting the Christian religion, they still fall back to their traditional beliefs while explaining the nature and cause of events. His family believed strongly that human parts could be used for rituals to acquire wealth. This may account for why Chidi strongly believed that his glomerulus was removed by his master and that was why he found it difficult to concentrate and believed that he could not get a woman pregnant, even though he never tried.

Chidi's father was an upper-middle-class Nigerian engaged in cloth trading. He was able to build houses in the city and one in the village. His mother was also very industrious and joined in her husband's trade. Chidi reported being happy during childhood and presented no history of abuse, whether physical, emotional, or sexual. He reported that his experience of failure started when he noticed that his penis was very small and did not look like that of his peers. He indicated feeling inferior and self-devalued as he had no one with whom to share his concerns. He said that it will be an abomination to discuss such thoughts with his parents or his elder siblings. Furthermore, all the efforts he made to get a girlfriend were not successful, though his mates were moving forward in heterosexual relationships during the last year of secondary school. At graduation, he managed to interact with a girl but was totally discouraged by her mother who noticed the relationship. Since then, Chidi started masturbating to gratify his sexual urges because he continued to believe that his penis was small and that he was not capable of having meaningful and lasting relationships. Also, he believed that being in an amorous relationship would put him at crossroad with the God, as his mother had always preached.

After two attempts to enter university, Chidi, at the advice of the parents and siblings, opted for apprenticeship. In apprenticeship, you are asked to live with a person who has mastered the trade. You are to live with the person and learn the trade for at least five to seven years. The essence is to master the skills of the business and be independent to start your own business. Chidi stayed with someone who was in the business of importing and selling shoes. It was one year into the learning of the trade that Chidi started complaining of psychotic symptoms. His first symptom
presentation was at the age of 20. In their time, it was the culture that new boys that came to learn trade would be initiated into manhood. This is no other thing than the person’s private parts be shaved by the older apprentice in the evening. It was a traumatic experience for Chidi, as he was already ashamed of the smallness of his penis and did not want to expose it to people.

In my analytic interpretation, I saw that as part of the precipitating factor that led to the collapse of ego defense mechanisms and paved the way for anxiety and subsequent psychotic manifestations. It was two weeks after this ritual that Chidi reported gradual onset of anxiety, complaints of voices which at first were taken as simple worries, then as they persisted began to focus on evil spirit possession and later founded the reason to consult the first psychiatrist he met. Since then, Chidi has met with five different psychiatrists and has been on anti-psychotic medications. At one point, he had remission then traveled to Zimbabwe to live with his senior brother and help in trading. He was able to hold on for six months before relapse. Part of the relapse as presented by his elder sister was his inability to manage his medication and total refusal for others to help him. When he could not stay with his brother’s family in Zimbabwe, he was brought back to Nigeria.

**Emotional Functioning**

Chidi was emotionally unstable with high levels of anxiety and insomnia when he presented to the clinic. He was always worried and confused about the thoughts and voices bombarding his head, as well as having to put up with the family challenging the authenticity of his thoughts and voices. He was further worried about his inability to start a trade and his family’s unwillingness to sponsor him in another trade because of his emotional instability.

**Preliminary Formulation**

At the end of the initial therapeutic interview with Chidi and the family (two elder sisters), followed by another two weeks of hospital observation in our center, it was clear that Chidi suffered from schizophrenia. In our center, we follow the DSM-5 diagnostic criteria augmented with clinical objective and projective tests and neuropsychological assessment when need arises. In Nigeria the use of neuropsychological assessment in psychiatric hospitals is not common. Chidi met DSM-5 criteria for schizophrenia. He presented symptoms of delusion, hallucination, disorganized speech and grossly disorganized behavior, particularly silliness and resistance to instructions. He had marked disturbance in the level of functioning in work, social relationship, interpersonal relationship and IADL as compared to prior onset of his disorder. He was diagnosed with this disorder more than ten years before coming to our center. His behavioral disturbance was not attributed to physiological effects of a substance or another medical condition. Since the referral appeal was for inpatient cognitive and emotional rehabilitation, medication management, and neuropsychological evaluation following treatment resistance, Chidi was admitted to the male public ward for psychotherapy and medication management.

One remarkable thing that we observed was that he always complained following individual and group psychotherapy that he could not concentrate or understand the teachings in psychotherapy groups. The group psychotherapy was a didactic form that was based on psychoeducation while the individual therapy was interpersonal process therapy with high level of integration with other therapies. Based on his referral for neuropsychology and informed of neuropsychology literatures on subtypes of schizophrenia with varied neuropsychological presentations, we administered neuropsychological tests to Chidi one month after his admission in the rehabilitation center to better understand brain–behavior relationship in the illness.
Test and Norm Selection

We selected an available test battery that could be administered to Chidi based on his age and educational achievements and also based on history of the test having been used for research in Nigeria. One benefit of neuropsychological testing in Nigeria is that many of the tests can be administered in the English language and language proficiency tends to be relatively good. This is because many Nigerians are exposed to the English language, because that is the lingua franca and is learned in kindergarten. For individuals with 12 years of education, understanding and doing neuropsychological tests in English language is not difficult. Moreover, in our rehabilitation center we have a culture of giving task instructions in both English and local languages to improve task understanding. That said, we also acknowledge that no comprehensive demographically corrected normative neuropsychological test data are available for Nigerians, although some of the tests have been used locally for studies. Where applicable we use test norms derived from local samples. Otherwise, original test norms and clinical judgment were used for test interpretation of this client.

The following tests were available for administration:

1. Montreal Cognitive Assessment (MoCA)\(^5\)
2. Bender Visual Motor Gestalt Test (BVMGT): The Hutt Adaptation as presented by Lack\(^6\) was used for assessment of organic dysfunction in the client.
3. Number Span Test (J Kramer)\(^a\): Forward and Backward
4. Craft Story 21 Recall (S Craft)\(^a\): Immediate and Delayed
5. Benson Complex Figure Copy (J Kramer)\(^a\): Immediate, Delayed and Recognition
7. Multi-lingual Naming Test (MINT) (TH Gollan)\(^10\)
8. Verbal Fluency: Phonemic Test (F,L) (AE Hillis)\(^11\)
9. Paced Auditory Serial Addition Test (PASAT) (DM Gronwall)\(^12\)

For number span test, Craft Story 21, Benson Complex Figure Copy and Verbal Fluency: Phonemic Test see Uniform Data Set (UDS) of the National Alzheimer’s Coordinating Center (NACC).\(^8,9\)

Test Results and Impressions

Chidi performed below the norm on the MoCA which measures global cognition. His score of 23 as against Normal ≥26 (See NACC UDS Version 3.0 form C2) suggested global cognitive impairment. Nigerian data for people between the ages 50 and 70 was >20 for education above 12 years and >15.75 for 12 years education.\(^13\) Using those local norms, Chidi scored above the mean score for his education group although his age of 41 was very much below the age norms. Overall, the impression was that Chidi may be operating within a borderline range for global cognition.

Subtest analysis for MoCA showed that Chidi performed very poorly on delayed verbal recall (0/5) and language fluency (5/11 per 60 seconds). This accounted for his overall poor performance. On BVMGT brain impairment indices, he had four impairment indices on simplification (Bender drawing, figure 3), perseveration (Bender drawing, figure 3), closure difficulty (Bender drawings, figures 7 and 8) and angulation difficulty (Bender drawing, figure 2) and took 25 minutes to draw the figures against a 15-minute benchmark\(^a\) with extreme care and deliberation. The total error score was 5 showing possible organic dysfunction.\(^a\) On Benson Complex Figure test, he performed well above the norm (N) on immediate recall: 16/17 (N > 15) and delayed recall: 15/17 (N > 12.8) as well as recognition where he recognized the original stimulus from the four options. His Trails A & B was without error and within normal time (Trail A: <150 seconds; Trail B: <300 seconds).
His Craft Story 21 immediate recall was 17/44 (Mean(N) > 22.8, SD: 6.8) while delayed recall was 19/44 (N > 21.3, SD: 6.1). Although his scores were below the mean, they did not fall below 1 SD from the mean. His Number Span Test Forward: total correct was 10/14 (N > 8.8, SD:2.7); length of longest correct series: 7/14 (N > 6.8, SD: 1.3) were above the mean score but not up to 1 SD above the mean and the Backward: total correct: 5/14 (N > 8, SD:2.9); length of longest correct series: 4 (N > 5.5, SD: 1.7) were below the mean and 1SD. He appeared to manifest impairment in attention and concentration as well as measure of working memory. His PASAT score was 41/60 (N > 46.7, SD:9.1) was 1SD below the mean.

His MINT total score was 25/32 (N > 29.7, SD: 1.7) which was below the mean and 2 SD below the mean. On phonemic verbal fluency he scored 4/40 (N > 14.8, SD: 3.2) on F and 5/40 (N > 14.4, SD:3.9) on L. Obviously he performed below 4 SD from the mean on F and L, respectively.

Overall, the picture of the neuropsychological test presented some remarkable issues for psychiatric diagnosis and management:

1. There was concern about organicity (brain impairment) following Chidi’s BVMGT and MoCA performance.
2. His visual–spatial performance as evidenced from Benson figure test and Trails showed no impairment.
3. There was significant impairment in language naming and verbal phonemic fluency tests signifying serious impairment in language, executive function, and frontal lobe dysfunction.
4. Poor performance on PASAT and number span particularly the backward showed impairment in attention and concentration as well as working memory load.
5. Attention and concentration impairments coupled with his verbal fluency and language impairments likely accounted for his inability to make sense of his psychotherapy sessions. Psychotherapy is a complex exercise that requires reasonable cognitive entry for proper understanding especially with the more verbally dependent forms of psychotherapy that Chidi was receiving.

Feedback Session for Further Treatment

Feedback was presented to the treatment team at hospital conference meeting following assessment. It is the tradition of the rehabilitation center to hold weekly conference meeting of treating professionals to discuss treatment outcomes of their patients as well as review reports of psychological assessments. Chidi’s neuropsychological report was presented to the board and below were the consensus decisions following his report:

1. Chidi was switched from talk therapy to behavior therapy in recognition of his language, attentional, and executive functioning limitations. The consensus was that he may benefit more from behavior therapy that involves more performance goals than relying on verbal activities. Particularly, behavior therapy would start by working on his aggression and reactions to his auditory hallucination. The use of operants in the form of reinforcement was recommended along with the use of tokens. Since Chidi wanted to leave the hospital as soon as possible, it was recommended that he should be asked to work toward receiving sufficient tokens that would earn him discharge from the hospital. Particularly, the token economy was designed to improve his performance on ADL and medication adherence.
2. It was recommended that Chidi receive adjunct brief cognitive therapy to work on his irrational thoughts and delusion, with reliance on more visually based strategies rather than
verbal. It was recommended that the therapy be very brief and not more than 30 minutes because of his problems with concentration.

3 The panel further made contacts to enroll Chidi in cognitive training research that was about to be started in a university nearby.

4 The consulting physician further recommended pyritinol hydrochloride as cognitive enhancer. Neuroimaging was not part of the patient’s assessment because of the associated costs and the worry that the patient may not be able to stay in the scanner for the period of imaging.

5 The consensus was communicated to the family as part of clinical feedback. Families are given feedback from neuropsychological and personality assessment reports to carry them along to future therapists and doctors to guide their treatment.

Section III: Lessons Learned

• In a multi-ethnic and multi-lingual nation like Nigeria, socio-geopolitical perspectives, linguistic and religious schemas can mitigate the manifestation and perception of behavioral health conditions and their management.

• There are challenges in conducting assessments in settings with limited resources where neuropsychology is nascent, particularly when mental health conditions are viewed with skepticism and patients are stigmatized for their symptoms.

• Conventional psychological assessment of severe psychotic disorders in psychiatric hospitals in Nigeria may not provide all the information required for patients’ treatment planning, particularly when treatment is seen as non-effective. While typical diagnostic approaches in Nigeria include interviewing, observation, family report, and administration of objective psychological tests particularly MMPI, BDI, and sparingly intelligence tests; it is sometimes necessary to include measures of cognitive testing to support proper treatment planning.

• The case reviewed reflected the cultural orientation of working with both professionals and families of patients in order to support comprehensive treatment and rehabilitation. It also highlighted the incremental value of using neuropsychological approaches within the Nigerian context, to provide tailored, cognitively informed treatment recommendations.

• In a region where neuropsychology is nascent, being well integrated in a professional community can enhance the ability to educate allied health providers about the scientific underpinning of behavioral symptoms and benefits of neuropsychological evaluations.

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