

Review Articles

Psychiatric Care of Deaf Patients in the General Hospital: An Overview

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Background: *While the number of Deaf and hard-of-hearing patients worldwide is estimated at six hundred million, few specialized psychiatric services or training resources exist to support the provision of mental health care to this population. This presents a particularly acute problem in the general hospital, where the consultant psychiatrist is likely to be confronted with the challenges of providing comprehensive*

psychiatric evaluation, diagnosis and treatment to patients with whom he or she may have limited experience or confidence. Method: We review critical considerations in the work-up, differential diagnosis, and management of commonly-presenting psychiatric disorders among Deaf patients in the general hospital setting.

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INTRODUCTION

Deaf and hard-of-hearing patients (a term that has replaced “hearing-impaired” by the strong preference of most Deaf communities) are often admitted to general hospitals and are seen by psychiatric consultants in collaboration with medicine and neurology teams. Although textbooks exist for the Deaf mental health specialist,¹ few articles serve as guides for consultants who are faced with the challenges of caring for Deaf patients. (N.B.: Deaf advocates use the distinction “big D” for culturally Deaf persons vs “little d” for deafness as a clinical condition.^{2,3}) Psychiatric consultants may be called to assist with the differential diagnosis, management, and capacity evaluations, bearing in mind that Deaf persons' trauma exposure, mood and anxiety disorders, and psychosis may present distinctively and occur at higher rates than found in the general population and that certain etiologies and histories of deafness (such as total language dysfluency, the absence of any signed- or spoken-language learning) may correlate with cognitive deficits.⁴ The global number of Deaf and hard-of-hearing persons is estimated at

600 million.⁵ Yet owing to the paucity of Deaf-accessible mental health services in many parts of the world, including the United States, utilization of psychiatric services by Deaf patients is often limited; thus gaining experience and confidence in the care of Deaf patients poses a challenge for psychiatrists in training as well as their supervisors.

This article seeks to enhance the care of Deaf individuals by providing a medical definition of deafness, discussing how to gather history using effective communication strategies, and highlighting common comorbid medical and neurologic illnesses. We also describe psychiatric disorders among Deaf patients as

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well as coping differences between congenital and acquired hard-of-hearing patients, recommend medical and neurologic work-ups, and provide treatment recommendations. As enhancement of psychiatric and medical care for Deaf individuals rests on improving both available interpreter resources and education among health care providers, we also examine some of the psychodynamic issues possibly involved in many physicians' anxiety about attempting to communicate with, evaluate and effectively treat patients who are Deaf.

SETTING UP THE ESSENTIAL CONDITION FOR AN ACCURATE EVALUATION: COMMUNICATION SERVICES

A crucial step in any evaluation of a Deaf person, whether psychiatric, medical, or neurologic, includes arranging for an interpreter (legally mandated since the Americans with Disabilities Act [ADA] of 1990)⁶ and clarifying the roles of the Deaf patient's team members. This may involve using assistive listening or video remote interpreting services when access to live/in-person interpreters is not available, though it should be noted that many Deaf patients, like hearing patients, prefer live interpreter services to facilitate connection with the treatment team. Although many physicians use back-and-forth note writing with Deaf patients as a stopgap measure, this strategy does not satisfy the ADA requirements, in part because of varying degrees of literacy among Deaf patients.^{7,8} For Deaf patients who know American Sign Language (ASL) (accounting for approximately 6% of Deaf Americans), ASL interpreters are required; some countries have counterparts of ASL (e.g., Russian Sign Language and Spanish Sign Language).⁹ For those who are “language dysfluent” or “prelingual” (i.e., who have not been taught any formal language), which comprises approximately half of all Deaf individuals, a certified Deaf interpreter (a Deaf individual who has been trained in recognizing attempts to communicate by the prelingual or language-dysfluent patient) working alongside an ASL interpreter is required. Certified Deaf interpreters can use ASL to translate the dysfluent gestures to the interpreter, who then voices the ASL signing in English. Nuances of interpreter services, such as “signer” vs “ASL fluent,” should be noted in the chart, as these have legal significance, with Deaf patients entitled to ASL-fluent

interpretation vs the more general “signer” category. In the emergency department (ED), many maneuvers, such as using interpreters, may not be immediately available. However, it is critical when making high-stakes decisions with medicolegal implications (e.g., capacity determinations and dealing with end-of-life issues) that communication specialists be present; law suits (e.g., associated with noncompliance of ADA standards) have resulted from a lack of access to facilitated communication within care settings.¹⁰ Although some Deaf individuals speak and lip-read, clinicians cannot assume that their spoken words match the intended meanings; therefore, interpreter services should be used. Even for skilled lip-reading Deaf individuals, variations in accent, pronunciation, and enunciation by the speaking individual can be barriers to accurate understanding. In general state commissions for Deaf and hard-of-hearing individuals can provide interpreter services.

Even in acute care settings, time should be devoted to providing both orientation and reassurance. Equally helpful is attention to visual stimulation. Interviewers should avoid making distracting motions (e.g., playing with pens or other objects or gesturing while talking) or being in a room with flickering lights.¹¹ Such distractions make it more difficult for visually-oriented people to concentrate; many high-functioning Deaf individuals report heightened surveillance of visual inputs, making them more sensitive to these disturbances.¹² It is also critical that distractions be eliminated when the Deaf patient is processing what the interpreter is communicating while formulating his or her response to the interpreter—i.e., speaking to or distracting a Deaf person who is watching an interpreter is analogous to interrupting a patient in conversation with another health care provider. Among Deaf people who use sign language, visual stimuli are processed in the superior temporal gyrus and other regions involved in auditory processing among hearing people.¹³ Thus, incidental sights and distracters could impede the processing of language by Deaf patients and should be avoided. In addition, the insights and expertise of communication specialists regarding Deaf signing and language-dysfluent patients can make a critical difference in quality of care. The communication specialist can help ensure that all standards of each patient's communication needs are met by being sensitive to attempts at communication in the absence of formal language

training, which can include minimal sign language, gesture, mimic, home signs, and other variations.¹⁴

HISTORY-TAKING FOR OPTIMAL CARE OF DEAF PATIENTS

Medical and psychiatric history-taking, including gathering information about the chief complaint, should proceed as it does for a person with normal hearing. This is as critical a point as education about sensitivity to Deaf culture—i.e., if Deaf individuals are to truly have equal access to the best standard of medical and psychiatric care, the unique knowledge of physicians and other health care providers (which ASL and certified Deaf interpreters do not share, by virtue of their having a much different training and education trajectory) must be brought to bear on evaluation as well as treatment in an objective and rigorous manner. In addition, taking a deafness history is recommended (covering etiology, education, and nature/extent of language exposure). Clinicians can further contribute to a Deaf patient's care by recording the names and contacts of the Deaf patient's outpatient team (e.g., case manager). Care in the ED may be the last time for several weeks that a Deaf patient's family is present and involved in care, given that family stressors may play a role in emergent presentations. The contacts, services (including any in-home services), medical history, family history, and medication history (including contact information for pharmacies) are important. In cases where the Deaf individual is brought to the ED by police or emergency medical technicians without family or other involved individuals, local advocacy organizations and the state commission for the Deaf should be engaged early on. Frequently, local advocacy organizations are already serving medically, psychiatrically, or otherwise complex Deaf patients, but hospitals may serve as the first point of contact between a Deaf patient and existing services.¹⁵

Though, in some cases, family members may seem the most attuned or capable of conveying what their Deaf relative wants to communicate, the ADA discourages the use of relying on family members as interpreters. Providers should bear in mind that many Deaf individuals have some lip-reading capacity. Moreover, ASL interpreters, when present, are legally bound to interpret all audible communication taking place within “earshot” of the Deaf patient. Thus,

2 health care providers talking in front of a Deaf person will be “translated” to that person even if the conversation is between both the providers and not directed toward the patient.

WHAT MEDICAL AND NEUROLOGIC PROBLEMS CAN ACCOMPANY OR CAUSE DEAFNESS AND MUST BE SCREENED FOR IN THE COMPREHENSIVE EVALUATION?

Since the passage of the ADA and the introduction of the term “Deaf” to signify “Deaf culture” in 1972 by Woodward,¹⁶ advocacy by the Deaf community has attempted to wrest the concept of deafness away from medical disability. Bearing this in mind, medical and neurologic assessments are still key in the psychiatric care of Deaf patients. [Table 1](#) displays some of the most common medical and neurologic etiologies of deafness, bearing in mind that although psychiatric consultants may not be involved in the differential diagnosis of the deafness, history-taking that includes questions aimed at learning the cause and history of the patient's deafness is critical to understanding developmental, psychiatric, and medical complications that could be present.

HOW IS DEAFNESS DEFINED MEDICALLY AND NEUROLOGICALLY?

Unlike legal blindness, there is no analogous definition of “legal deafness.” The ear normally detects sounds in the range of 20–20,000 vibrations per second. A person who cannot detect sound at an amplitude of 20 dB in a frequency range of 800–1800 vibrations per second is said to be hard-of-hearing.¹⁷ Any degree of deafness qualifies a person for assistive communication according to laws passed since 1973. Medically and neurologically, deafness falls into several categories: (1) congenital vs acquired, (2) early-onset vs later-life onset, (3) sensorineural vs conduction vs mixed type, (4) partial vs total, (5) genetic and sporadic vs part of an inherited genetic syndrome (about which there could be warning within the family either through prenatal genetic counseling or the presence of affected family members), and (6) born to hearing vs Deaf parents.¹⁸

Congenital, and genetically attributable or hereditary hearing loss (distinct from genetic syndromes with multiple features) may be classified as autosomal

TABLE 1. Systemic Disorders Affecting the Ear

Granulomatous/infectious disorders of the ear
Langerhans cell histiocytosis
Eosinophilic granuloma
Hand-Schüller-Christian disease
Letterer-Siwe disease
Sarcoidosis
Lyme disease
Fungal infections
Wegener granulomatosis
Tuberculosis
Autoimmune diseases/collagen vascular disorders
Relapsing polychondritis
Systemic lupus erythematosus
Rheumatoid arthritis
Giant cell arteritis
Sjögren syndrome
Polymyositis/dermatomyositis
Ankylosing spondylitis
Vogt-Koyanagi-Harada syndrome (includes ocular and other neurologic findings)
Behçet syndrome
Autoimmune inner ear disease
Cardiac disease
Arrhythmias (genetic disorders manifesting hearing loss and long QT/other features)
Anemia (e.g., sensorineural hearing loss in patients with sickle cell anemia)
Progressive systemic sclerosis
Bone diseases (Paget, osteogenesis imperfecta, fibrous dysplasia, osteopetrosis, osteitis fibrosa cystica, and chronic osteomyelitis)
Miscellaneous (AIDS, mucopolysaccharidoses, polyarteritis nodosa, Cogan syndrome, neoplastic disease, leukemia, lymphoma, paraganglioma, multiple myeloma, and metastatic disease/meningeal carcinomatosis)

Adapted with permission from Gulya et al: Glasscock-Shambaugh Surgery of the Ear. PMPH; 2010.

dominant, autosomal recessive, or X-linked. Frequently, families are less prepared to deal with autosomal recessive hereditary hearing loss as all of the other family members can hear and current genetic screens do not predict the deafness.

Significant differences exist in the coping ability and susceptibility to psychiatric disorders (e.g., depression) among individuals with congenital vs acquired deafness. Coping ability (i.e., high functional status with respect to the deafness and effective utilization of Deaf-access services) versus dysfunctional coping style (i.e., isolation, destructive behaviors in response to real or perceived functional limitations) may be influenced by the age of onset, type of hearing loss, and related

responses by family members and other members of society (i.e., the local or cultural community of the Deaf individual). In general, deafness developing at a later age, or the concordance of Deaf child-Deaf parents, may predict less risk of developmental issues such as attachment disorders or abuse and neglect of Deaf children.¹

However, the critical issue is not at what age deafness develops but whether some form of language (either auditory or sign language) has been taught by the age of 3 years so that the child can achieve critical intellectual milestones and develop the capacity to learn new languages (such as ASL) later in life.¹⁹ The complex interplay of auditory inputs, memory development, language acquisition, and the growth of neural networks (as studied in songbirds and other preclinical models) underlies this link between language acquisition and normal brain development.²⁰ Studies on language-deprived, dysfluent, or prelingual people have detected abnormal findings on evaluation of evoked responses and functional imaging of the brain.²¹ Gulati and others have suggested that some form of cognitive impairment arises if a child is not taught any form of language by the age of 7 or 8 years—making the historical association of deafness and intellectual compromise a self-fulfilling prophecy.²² Approximately 90% of Deaf people are born to hearing parents; these children may be at greatest risk of language deprivation.²³

A critical role of health care providers—independent of discipline or specialty—is to diligently investigate, with the parents of a Deaf child, which local services are available and to encourage/help the family to link to such services (e.g., especially if the parents are immigrants with limited English or if the child is language dysfluent). Deaf communities have also benefited from technologies (such as video conferencing for telephone calls and e-mail); success rests on Deaf individuals acquiring language fluency.^{24,25}

The issue of cochlear implants and cures for Deafness may also come up in the medical and psychiatric care of Deaf persons, particularly for children of hearing parents—and as this issue is of importance within the Deaf culture, clinicians should be aware that it is not a neutral or purely scientific topic. When taking a medical history, one should nonjudgmentally inquire about the use of hearing aids (which are more effective in conduction hearing loss or diseases of sound wave conduction through the outer

TABLE 2. Ototoxic Medications

Aminoglycosides	Gentamicin, streptomycin, tobramycin, amikacin, neomycin, and polymyxin B (note that topical aminoglycosides do not appear to be ototoxic unless applied to the tympanic membrane)
Macrolides	Erythromycin, azithromycin, and clarithromycin
Diuretics	Furosemide, ethacrynic acid, bumetanide, and bendroflumethiazide
Salicylates	
Antimalarials	Quinine and chloroquine (high dosages)
NSAIDs	Naproxen, indomethacin, diclofenac, etodolac, and sulindac
Antineoplastic drugs	Carboplatin, cisplatin, bleomycin, methotrexate, nitrogen mustard, vincristine, and vinblastine
Mucosal protectant	Misoprostol
Chelating agents	Deferoxamine
Topical otologic preparations	Neomycin and hydrocortisone
Chemical agents	Heavy metals (mercury and lead), solvents (toluene and styrene), arsenic, cobalt, cyanides, benzenes, and propylene glycol
Central nervous system agents (including psychotropic medications)	
Narcotic analgesics	Hydrocodone
Propranolol	Quinidine
Psychopharmacologic agents	Antidepressants
Amitriptyline, doxepin, desipramine, imipramine, protriptyline, fluoxetine, paroxetine, bupropion, phenelzine, and trazodone	Antipsychotics
Molindone	Benzodiazepines
Alprazolam, clorazepate, chlordiazepoxide, diazepam, flurazepam, lorazepam, midazolam, oxazepam, prazepam, quazepam, temazepam, and triazolam	Carbamazepine
Lithium	Thalidomide
Miscellaneous toxic substances	Alcohol, caffeine, lead, marijuana, nicotine, mercury, and gold

NSAIDs = nonsteroidal anti-inflammatory drugs.

Adapted with permission from the World Health Organization Programme for the Prevention of Deafness and Hearing Impairment (1994) and from *Ototoxic Medications*, a public health pamphlet of the League for the Hard of Hearing (2014).

ear or inner ossicles and in which the Weber test of a tuning fork to the midline localizes the sound to the affected ear)—only to ensure that if the patient does usually use them, he or she is given access to the usual aids as soon as medical stability allows for this.

Hearing aids are less useful for sensorineural hearing loss (in which there is damage or disease in the vestibular nucleus or in cranial nerve VIII); thus, hearing aids are more frequently used in presbycusis as opposed to other forms of acquired or congenital

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hearing loss). Patients with cochlear implants should also be assessed regarding a history of implantation surgery and its complications. Cochlear implants are electronic devices for which surgical implantation is required, bypassing damaged parts of the ear and transmitting signals via the auditory nerve to the brain. Both surgery and subsequent training to use newly acquired or regained hearing skills are required to acquire comfort with auditory language after cochlear implants; these implants are more often used by adults with hearing loss but they are also used in children older than 1 year in the United States. Limitations on the ability to comprehend speech exist with current models of cochlear implants, though research in technologic improvement is underway to enable more sensitive speech recognition.²⁶ Globally, about 500,000 Deaf persons have undergone cochlear implantation—thus, they are still a minority.

The use of cochlear implants in children (as an alternative to immersive ASL instruction) is controversial in the Deaf community. For patients with implants, it is best to continue to offer interpreter services. It may also be best to refer the patient to an ear, nose, and throat surgeon for the discussion of the risks and benefits of cochlear implants, so that the psychiatrist and other providers can support the patient's information gathering but remain neutral as to whether such implants are desirable (i.e., leave this decision to the patients and their families). One observation made by many Deaf health care providers is that, although families are told in detail about cochlear implants by many hearing physicians, they are often not told about Deaf schools, intensive ASL training, and other options viewed by Deaf cultural advocates as viable alternatives to medically “curing” hearing loss.²⁷

WHAT SHOULD THE PHYSICAL AND NEUROLOGIC EXAMINATION OF A DEAF PSYCHIATRIC PATIENT ENTAIL?

Physical examination to assess for genetic syndromes associated with deafness, which could merit genetic testing and related medical and neurologic follow-up, is a key addition to the routine physical examination required for psychiatric patients. Among psychiatric patients, velocardiofacial syndrome, Turner syndrome, Down syndrome, and craniofacial syndromes (including Treacher Collins syndrome) are important

to note on examination because of their medical comorbidities (Table 1). Neurologic examination should include cranial nerve examination, vision chart testing if possible, and a complete examination in the context of any history of traumatic brain injury or loud noise blasts (including in war zones, when examining refugee patients). Physical abuse as a cause of deafness in adults and children is common and should also be screened for.²⁸

Against a common laypersons' assumption that Deaf people and others with sensory or cognitive impairments do not abuse substances, substance disorders have significant prevalence among Deaf patients (and specialized treatment settings, though limited, exist).²⁹ Of special note are the physical and neurologic examinations (assessing for asterixis, ataxia, *fetor hepaticus*, stigmata of chronic liver failure, papillary constriction vs dilation), substance intoxication, and withdrawal syndromes among Deaf patients. Spoken speech has long been a cornerstone of rapid diagnosis of such syndromes among hearing patients—i.e., confabulation, loud or slurred speech, or pressured speech varying with type of intoxicating substance. Equivalent presentations among signing Deaf patients may not be as familiar to either interpreters or family members, who may be unaware of the substance use. More subtle attention to physical findings and cues is critical, as are results of laboratory tests and history from a variety of sources, including Deaf social networks and service providers. Underdiagnosis and underestimation of substance use among Deaf patients by physicians can result when attention is not paid to supplement familiar cues.³⁰

WHAT ARE THE KEY FEATURES OF PSYCHIATRIC DISORDERS AMONG DEAF PEOPLE?

The epidemiology and prevalence of psychiatric disorders among Deaf patients and hearing patients (particularly among chronically mentally ill populations) may not differ substantially³¹; perceived differences flow from lack of knowledge about Deaf culture and experiences and resultant biases by clinicians.³² In a study of 30 Deaf inpatients and a historical comparison group of 60 hearing patients (each cohort admitted over the same 10-y period to a state mental hospital in the United States), chronically mentally ill Deaf patients had a high prevalence of mild mental

retardation (33%), impulse control disorders (23%), and pervasive developmental disorders (10%) but a much lower prevalence of substance disorders (20%) and personality disorders (17%). As Landsberger and Diaz (psychologists on a specialized Deaf unit) pointed out, language dysfluency is most likely to be confused with psychosis “not otherwise specified”. This issue is further complicated for many patients with this diagnosis owing to a difficulty in learning concepts about time, sequence, causality, and other abstractions (leading to perseveration). In addition, many high-functioning Deaf individuals (including Deaf social workers and rehabilitation staff) are likely to resist the psychiatric notion that language mirrors thought, because many Deaf people have been frustrated by having thoughts and insights that they could not communicate to hearing people or to other Deaf people who possess different language skills.³³ An additional diagnostic problem comes from the level of English used in psychiatric scales (e.g., the Beck Depression Inventory or the Hamilton Anxiety Scale); many Deaf individuals do not have the ninth grade education level (with the median educational level of Deaf high school graduates estimated at 4.5-grade level) required to complete these scales.³⁴

In an inpatient sample (2010) for mood disorders, eating disorders, anxiety disorders, or cognitive disorders (such as the dementias), the prevalence between Deaf and hearing patients did not differ. Similarly, other studies (Black and Glickman,³¹ Fellingner *et al.*,³⁵ and de Bruin and de Graaf³⁶) revealed that the prevalence of psychotic disorders did not differ between Deaf and hearing subjects. Key considerations in the diagnosis and management of psychosis among Deaf patients (which has a prevalence of up to 60% in some hospitalized samples³⁷) include the following: (1) issues of seclusion and restraint, (2) the nature of hallucinations (including auditory hallucinations), and (3) assessment of suicide risk.

Deaf hospitalized patients are restrained up to 4 times more than patients who can hear, when matched for diagnosis, age, race, and presenting problem (e.g., agitation).³⁸ The recommendations outlined in a recent report by the National Association of State Mental Health Medical Directors Council attempted to reduce the use of restraints in Deaf inpatients by increasing the cultural competency among nursing and clinical staff as well as taking extra time and care to establish a dialog with Deaf patients about personalized distress

reduction strategies and the use of restraints.³⁹ In acute care settings, it may help to remove potentially overstimulating visual inputs (blinking or flashing lights and crowds). Using solitary seclusion—without access to any signing staff or any person with whom the Deaf patient can communicate—is also inadvisable; if there is an observer, this staff person should be able to sign and, at a minimum, must be able to make eye contact with the Deaf patient so he or she can signal for help. Finally, certain facial expressions (e.g., angry expressions and challenging eye contact) should be avoided when attempting to de-escalate an severely ill or agitated Deaf patient. Facial expressions are part of the grammar of ASL and other sign languages and should be kept neutral.

Hallucinations among Deaf psychotic individuals have been extensively studied (though not in large samples or in a manner that controls for signing fluency, etiology of deafness, or other potentially influencing factors). Visual hallucinations in Deaf patients are thought to be more common than other types; however, subvisual percepts are thought to be as common among Deaf people with schizophrenia as they are among their hearing counterparts. These images may be of signing hands or moving lips and thus linguistic rather than visual in the sense of visual hallucinations experienced by hearing patients. Deaf psychotic patients experience auditory and even command auditory hallucinations at rates similar to those in psychotic patients who can hear. However, depending on their age at hearing loss, and the nature and extent of the loss (i.e., progressive vs congenital), they are less likely than hearing patients to be able to describe certain features (such as pitch, loudness, or volume) but are usually still able to identify sex and language of the voice and the meaning of hallucinated speech.⁴⁰ In particular, changes in signing (particularly rapid signing or rapid thoughts conveyed through signs) are often assumed to be psychotic in origin rather than due to a major mood disorder.

Suicide, grief, and trauma are key issues in the care of Deaf individuals for several reasons. Specific suicide risk factors among Deaf populations, both community and psychiatric, are poorly understood. In 1 study, Deaf college students (i.e., among the highest functioning Deaf individuals) had a 30% lifetime prevalence of suicide attempts, attributed to a higher rate of depression than in the hearing population.⁴¹ Trauma exposure in Deaf patients is also a pressing problem. Post-traumatic

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stress disorder among Deaf individuals is beginning to be addressed by novel therapeutic interventions and adaptations of trauma-centered therapies, including dialectical behavioral therapy and survivor groups.⁴² Child abuse and neglect suffered by Deaf children has not been systematically studied, but they are estimated to have a similar prevalence to the abuse experienced by other children with disabilities, representing a well-established risk factor for both physical and sexual abuse.⁴³ Trauma exposure should also be considered in the work-up and management of forensic Deaf patients, who may have a higher rate of foster care placement and associated neglect or abuse.⁴⁴ Although the evidence base for treatment of forensic Deaf patients is limited, it appears that this group has a higher prevalence of language deprivation and dysfluency and thus poses legal conundrums regarding their ability to understand their rights and to participate in the judicial process.⁴⁵ The clinician presented with such patients, who may be brought to the ED for medical clearance out of special consideration for their deafness, even when no psychiatric history is known or suggested, can assist the legal process by refraining from overly rapid definitive diagnosis and by creating a complete differential diagnosis. Features of language dysfluency that are commonly confused for symptoms of a primary thought disorder include lack of referents to time and subject, lack of sequential organization to stories, inappropriate or absent syntax, and excessive use of gesture, mime, and “home signs” (i.e., signs unique to an individual or family system) to fill in gaps in vocabulary. These can be misconstrued as psychotic disorganization or neologisms and contribute to the overuse of a psychosis not otherwise specified diagnosis among Deaf patients as language-dysfluent individuals may not have other key features of schizophrenia (such as social withdrawal, flat affect, or emotional disconnectedness, though these may be present among language-dysfluent Deaf individuals with character pathology).⁴⁶ A complete medical and neurologic work-up is also of particular benefit to such patients (rather than assuming that agitation or other emergent presentations are secondary to deafness alone).

TREATMENT CONSIDERATIONS FOR DEAF PSYCHIATRIC PATIENTS

As for hearing patients, comprehensive psychiatric treatment includes supporting the medical and

neurologic care of the patient (especially in consultation-liaison settings), providing psychopharmacology as indicated, and taking steps to create access to psychotherapies. Capacity evaluations may also be called for.

We have discussed some diagnostic and supportive considerations in medical and neurologic care. In such cases, there may also be a role for psychiatrists to support alliance-building between different medical professionals and Deaf patients by being alert to the assessment and management of anxiety toward Deaf people by many members of the general population, as described by theories of the social construction of “disability.”⁴⁷ Psychodynamic explanations of this anxiety may be informed by the Freudian concept of the “narcissism of small differences,” as described by Gabbard⁴⁸ and others. On this account, the anxiety stems from a fear of a lack of one’s own separateness, or in the case of disability (including psychiatric as well as medical), a fear of being identified as having the same disability as the patients one treats. Although psychiatric training that includes psychodynamic supervision deals in depth with the nature and appropriate handling of such counter-transference, it may be helpful for the psychiatric consultant to bear in mind this possibility and gently steer interdisciplinary team care in such a way that nonpsychiatrists may gain greater self-awareness about the possible effect of their attitudes toward deafness and disability on their interactions with patients (and hopefully might then be motivated to seek out further education and information, including from Deaf advocates directly).

Psychopharmacology considerations for Deaf patients are the same for hearing patients apart from bearing in mind specific conditions that may be associated with deafness (i.e., renal insufficiency or renal failure in Alport Syndrome, a genetic cause of deafness, as well as avoiding potentially ototoxic medications in hard-of-hearing patients, given the risk of inducing full hearing loss; [Table 2](#)). Clinicians should bear in mind that the perception of being “overmedicated” or “sedated” is common among Deaf psychiatric patients and may resonate with a different set of sensory perceptions or heightened sensory awareness other than hearing (i.e., sight, touch, and proprioception) that may be blunted by sedative-hypnotics and thus cause more discomfort or distress among Deaf patients than their hearing counterparts. Care should be taken to minimize

unnecessary sedation that could also interfere with attempts to communicate or to determine underlying causes of agitation that might relate to communication barriers.

It is worth noting that different states have different laws on interpreter use for the provision of psychotherapy. In 1994, a Florida ruling stated that psychotherapy through an interpreter did not meet the ADA's standard and must be delivered by signing therapists to ASL-using Deaf patients.⁴⁹ In the ED or inpatient hospital setting, the immediate welfare of the patient often relies on a physical examination to determine what diagnostic and other emergent procedures might be needed. However, in outpatient settings, the time and resources available to plan a given patient's visits are greater; it is critical to determine what the standard of psychiatric (and ancillary medical and neurologic) care are for Deaf patients so that the local standard of care can be met. Psychiatrists may be placed in the difficult position of not wanting to deny care to any individual yet not having the resources to offer such services (e.g., a signing psychotherapist rather than ASL interpreter for speaking/hearing therapists). In such cases, legal counsel, detailed and situation-specific consent for treatment, and clinical judgment must prevail in

addition to physician commitment to the equitable provision of care.⁵⁰

CONCLUSION

Myriad barriers to the delivery of comprehensive psychiatric care to Deaf patients exist, including having problems with communication access, making an accurate psychiatric diagnosis, having the potential for cultural misunderstandings, and having potential legal consequences. Clinicians confronted with these challenges should tread carefully, seek consultation, advocate for interpreter access, and link with Deaf advocacy organizations to facilitate sustained care in community settings. When in doubt, it may be wise for a clinician to simply refrain from verbal (even written) communication, as misconstrued communication may have a lasting negative effect, whereas delayed communication (so as to ensure accuracy and equitable access) is unfortunately an expected, even accepted, feature of many Deaf persons' experience.

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References

- Glickman NS, Gulati S: *Mental Health Care of Deaf People: A Culturally Affirmative Approach*. Mahwah: Lawrence Erlbaum Associates, Inc., Publishers; 2008
- Fernandes JK, Myers SS: Inclusive deaf studies: barriers and pathways. *J Deaf Stud Deaf Educ* 2010; 15(1):17–29, <http://dx.doi.org/10.1093/deafed/enp018> [Epub Jul 2009]
- Kusters A: Deaf utopias? Reviewing the sociocultural literature on the world's "Martha's Vineyard Situations" *J Deaf Stud Deaf Educ* 2010; 15(1):3–16, <http://dx.doi.org/10.1093/deafed/enp026> [Epub Oct 7, 2009]
- Landsberger SA, Sajid A, Schmelkin L, Diaz DR, Weiler C: Assessment and treatment of deaf adults with psychiatric disorders: a review of the literature for practitioners. *J Psychiatr Pract* 2013; 19(2):87–97
- Tucci D, Merson MH, Wilson BS: A summary of the literature on global hearing impairment: current status and priorities for action. *Otol Neurotol* 2010; 31(1):31–41
- Raifman LJ, Vernon M: New rights for deaf patients; new responsibilities for mental hospitals. *Psychiatr Q* 1996; 67(3):209–220
- Barnett S: Cross-cultural communication with patients who use American Sign Language. *Fam Med* 2002; 34(5):376–382
- Lederberg AR, Schick B, Spencer PE: Language and literacy development of deaf and hard-of-hearing children: successes and challenges. *Dev Psychol* 2013; 49(1):15–30, <http://dx.doi.org/10.1037/a0029558> [Epub Jul 30, 2012]
- Zaitseva G, Pursglove M, Gregory S: Vygotsky, sign language, and the education of deaf pupils. *J Deaf Stud Deaf Educ* 1999; 4(1):9–15
- Department of Justice. Office of Public Affairs. Justice Department Settles Americans with Disabilities Act Lawsuit with Michigan's Henry Ford Health System; 2012
- Dye MW, Hauser PC: Sustained attention, selective attention and cognitive control in deaf and hearing children. *Hear Res* 2013; 309C:94–102, <http://dx.doi.org/10.1016/j.heares.2013.12.001> [Epub ahead of print]
- Allen JS, Emmorey K, Bruss J, Damasio H: Neuroanatomical differences in visual, motor, and language cortices between congenitally deaf signers, hearing signers, and hearing non-signers. *Front Neuroanat* 2013; 7:26, <http://dx.doi.org/10.3389/fnana.2013.00026> [eCollection 2013]
- Letourneau SM, Mitchell TV: Visual field bias in hearing and deaf adults during judgments of facial expression and identity. *Front Psychol* 2013; 4:319, <http://dx.doi.org/10.3389/fpsyg.2013.00319> [eCollection 2013]
- Lazard DS, Innes-Brown H: Barone: adaptation of the communicative brain to post-lingual deafness. Evidence from

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- functional imaging. *Hear Res* 2014; 307:136–143, <http://dx.doi.org/10.1016/j.heares.2013.08.006> [Epub Aug 21, 2013]
15. The Committee on Disabilities of the Group for the Advancement of Psychiatry. Issues to consider in deaf and hard-of-hearing patients. *Am Fam Physician* 1997; 56(8):2057–2064 [2067-2068]
 16. Woodward J: The deaf way: understanding deafness as a cultural difference. In: Proceedings of the U.N. International Meeting on Human Resources in the field of Disability. Vienna, Austria: U.N. Center for Social Development and Humanitarian Affairs; 1989
 17. Faculty Guide to Deaf students' Needs. Available from: <http://www.saultcollege.ca/services/student-services/pdf/DEAFHARD.pdf> Accessed May 25, 2014.
 18. Centers for Disease Control categorization of deafness for medical research purposes. Available from: <http://www.cdc.gov/ncbddd/hearingloss/types.html> Accessed May 25, 2014.
 19. Lieberman AM, Hatrak M, Mayberry RI: Learning to look for language: development of joint attention in young deaf children. *Lang Learn Dev* 2014; 10(1):19–35, <http://dx.doi.org/10.1080/15475441.2012.760381>
 20. Nottebohm F, Liu WC: The origins of vocal learning: new sounds, new circuits, new cells. *Brain Lang* 2010; 115(1): 3–17, <http://dx.doi.org/10.1016/j.bandl.2010.05.002>
 21. Leporé N, Vachon P, Lepore F, et al: 3D mapping of brain differences in native signing congenitally and prelingually deaf subjects. *Hum Brain Mapp* 2010; 31(7):970–978, <http://dx.doi.org/10.1002/hbm.20910>
 22. Tate C: *Trauma in the Deaf Population: Definition, Experience, and Services*. Alexandria, VA: National Association of State Mental Health Program Directors (NASMHPD); 2012
 23. Feher-Prout T: Stress and coping in families with deaf children. *J Deaf Stud Deaf Educ* 1996; 1:3
 24. Hill JC: *Language Attitudes in the American Deaf Community*. Greensboro, NC: Gallaudet University Press; 2012. Available from: <http://gupress.gallaudet.edu/excerpts/LAADCTwo6.html>
 25. Commission for the Deaf & Hard of Hearing. *Health and Human Services. Understanding Deaf Culture*; 2014
 26. Russell JL, Pine HS, Young DL: Pediatric cochlear implantation: expanding applications and outcomes. *Pediatr Clin North Am* 2013; 60(4):841–863, <http://dx.doi.org/10.1016/j.pcl.2013.04.008>
 27. Gordon KA, Jiwani S, Papsin BC: Benefits and detriments of unilateral cochlear implant use on bilateral auditory development in children who are deaf. *Front Psychol* 2013; 4:719
 28. Pollard RQ Jr, Sutter E, Cerulli C: Intimate partner violence reported by two samples of deaf adults via a computerized American Sign Language survey. *J Interpers Violence* 2013 [Epub ahead of print]
 29. Alvarez JI, Adebajo AM, Davidson MK, Jason LA, Davis MI: Oxford House: deaf-affirmative support for substance abuse recovery. *Am Ann Deaf* 2006; 151(4):418–422
 30. Berman BA, Streja L, Guthmann DS: Alcohol and other substance use among deaf and hard of hearing youth. *J Drug Educ* 2010; 40(2):99–124
 31. Black PA, Glickman NS: Demographics, psychiatric diagnoses, and other characteristics of North American Deaf and hard-of-hearing in patients. *J Deaf Stud Deaf Educ* 2006; 11(3):303–321 [Epub May 10, 2006]
 32. Landsberger SA, Diaz DR: Inpatient psychiatric treatment of deaf adults: demographic and diagnostic comparisons with hearing inpatients. *Psychiatr Serv* 2010; 61(2):196–199, <http://dx.doi.org/10.1176/appi.ps.61.2.196>
 33. Diaz DR, Landsberger SA, Povlinski J, Sheward J, Sculley C: Psychiatric disorder prevalence among deaf and hard-of-hearing outpatients. *Compr Psychiatry* 2013; 54(7):991–995, <http://dx.doi.org/10.1016/j.comppsy.2013.04.004> [Epub May 17, 2013]
 34. Connolly CM, Rose J, Austen S: Identifying and assessing depression in prelingually deaf people: a literature review. *Am Ann Deaf* 2006; 151(1):49–60
 35. Fellingner J, Holzinger D, Dobner U, et al: An innovative and reliable way of measuring health-related quality of life and mental distress in the deaf community. *Soc Psychiatry Psychiatr Epidemiol* 2005; 40(3):245–250
 36. de Bruin E, de Graaf R: What do we know about deaf clients after thirteen years of ambulatory mental health care? An analysis of the PsyDon database, 1987–1999 *Am Ann Deaf* 2004–2005; 149(5):384–393
 37. Haskins BG: Serving deaf adult psychiatric inpatients. *Psychiatr Serv* 2004; 55(4):439–441
 38. Diaz DR, Landsberger SA: Exploring the use of seclusion and restraint with deaf psychiatric patients: comparisons with hearing patients. *Psychiatr Q* 2010; 81(4):303–309, <http://dx.doi.org/10.1007/s11126-010-9139-x>
 39. National Association of State Mental Health Program Directors. *Reducing the Use of Seclusion and Restraint: lessons from Deaf and Hard of Hearing Communities*. Medical Directors Council; 2002
 40. Landsberger SA, Diaz DR: Identifying and assessing psychosis in deaf psychiatric patients. *Curr Psychiatry Rep* 2011; 13(3):198–202, <http://dx.doi.org/10.1007/s11920-011-0186-2>
 41. Turner O, Windfuhr K, Kapur N: Suicide in deaf populations: a literature review. *Ann Gen Psychiatry* 2007; 6:26
 42. Davidson F, Cave M, Reedman R, Briffa D, Dark F: Dialectical behavioral therapy informed treatment with deaf mental health consumers: an Australian pilot program. *Australas Psychiatry* 2012; 20(5):425–428, <http://dx.doi.org/10.1177/1039856212458981> [Epub Sep 26, 2012]
 43. Pérez-Fuentes G, Olfson M, Villegas L, Morcillo C, Wang S, Blanco C: Prevalence and correlates of child sexual abuse: a national study. *Compr Psychiatry* 2013; 54(1):16–27, <http://dx.doi.org/10.1016/j.comppsy.2012.05.010> [Epub Jul 30, 2012]
 44. Vernon M, Steinberg AG, Montoya LA: Deaf murderers: clinical and forensic issues. *Behav Sci Law* 1999; 17(4):495–516
 45. McCay V, Raifman LJ, Greenberg SF, Monteiro B: Forensic pretrial police interviews of deaf suspects avoiding legal pitfalls. *Int J Law Psychiatry* 2001; 24(1):45–59
 46. Horton HK, Silverstein SM: Visual context processing deficits in schizophrenia: effects of deafness and disorganization. *Schizophr Bull* 2011; 37(4):716–726, <http://dx.doi.org/10.1093/schbul/sbr055>

47. Nazli A: "I'm healthy": construction of health in disability. *Disabil Health J* 2012; 5(4):233–240, <http://dx.doi.org/10.1016/j.dhjo.2012.06.001> [Epub Aug 13, 2012]
48. Gabbard GO: On hate in love relationships: the narcissism of minor differences revisited. *Psychoanal Q* 1993; 62(2):229–238
49. Available from: http://www.mh.alabama.gov/downloads/MIDS/DS70703_TherapyUsingInterpretersQuestionsUseInterpretersTherapeuticSettingsMonolingualTherapists.pdf. Describes current guidelines to be ADA compliant as well as 1994 Tugg vs Towey ruling
50. Hamerdinger S, Karlin B: Therapy using interpreters: questions on the use of interpreters in therapeutic setting for monolingual therapists. *J Am Deafness Rehab Assoc* 2003; 36(3):12–30