Unit 5: INTELLECTUAL DISORDERS

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Intellectual Disabilities, Unspecified and Specified Intellectual Disabilities

DEFINITION

a. Intellectual Disability

Multiple definitions exist for "Intellectual Disability", which include the following:

- "A disability characterized by **significant limitations both in intellectual functioning and in adaptive behavior**, which covers many everyday social and practical skills. This disability originates before the age of 18." (The American Association on Intellectual and Developmental Disabilities, n.d.)
- **"Significantly subaverage mental function** with associated difficulties in communication, self-help skills, independence, and motor development." (Gillman et al., 2011)
- "Characterized by **onset in the developmental period (before the age of 22 years**), **significant limitations in adaptive behavior** (i.e., conceptual, social, and practical skills to function in daily life), and **significant limitations in intellectual functioning** (e.g., learning, reasoning, and problem solving)" such that the individual fails to meet standards of personal independence and social responsibility in one or more aspects of life (American Speech-Language-Hearing Association (ASHA), n.d.; American Psychiatric Association, 2013).
- Previously referred to as **"mental retardation"**, but shifted to the current description in the 1980s to move towards "person-first language, reflecting the idea that the disability does not define the person." (ASHA, n.d.)

b. Specified Intellectual Disability: Global Development Delay (GDD)

- The American Psychiatric Association (2013) states that Global Developmental Disorder is a category of intellectual disability **reserved for individuals under the age of 5 years when the clinical severity level cannot be reliably assessed during early childhood,** diagnosed when an individual fails to meet expected developmental milestones in several areas of intellectual functioning. It applies to individuals who are unable to undergo systematic assessments of

intellectual functioning, including children too young to participate in standardized testing.

c. Unspecified Intellectual Disability

- The American Psychiatric Association (2013) states that Unspecified Intellectual Disability is a category of intellectual disability **reserved for individuals over the age of 5 years when the assessment of the degree of intellectual disability is rendered difficult or impossible due to associated sensory or physical impairment** (blindness, deafness), locomotor disability, or presence of severe problem behaviors or co-occurring mental disorder.

ETIOLOGY

Fogle (2019) states that "approximately **30% to 50% of all cases** of developmental and intellectual disability are **idiopathic;** that is, they have **no known cause**". But factors that may increase the risk of intellectual disability include:

- **Genetic Factors**
  - Chromosomal Abnormalities (e.g., Down Syndrome, Fragile X Syndrome)
  - Metabolic disturbances
  - Brain malformations (e.g., microcephaly)
  - Maternal Disease (e.g., placental disease)
- **Pregnancy Complications**
  - Low weight at birth
  - Lack of oxygen at birth
  - Premature birth
  - Anoxia at birth
- **Environmental Factors**
  - "Intellectual disability may result from an acquired insult during the developmental period form, for example, a severe head injury" - DSM 5
    - Hypoxic ischemic injuries (due to cardiac arrest or profound hypotension)
    - Traumatic Brain Injuries
    - Seizure Disorders
    - Demyelinating Disorders
  - Exposure to toxins, chemical agents, or viral infections during pregnancy
  - Exposure to toxins, chemical agents, or viral infections during developmental period (i.e., meningitis, encephalitis, exposure to lead or mercury, etc.)
  - Family Stress
  - Abuse/Neglect

- **Added Notes:**
    - The ASHA (n.d.), states that some genetic and perinatal conditions may cause intellectual disorders.
        - **Down Syndrome** is the **largest genetic cause** of ID
        - **Fragile X syndrome** is the **largest inherited cause** of ID
        - **Fetal Alcohol Syndrome** is the **largest environmental cause** of ID.

PREVALENCE & INCIDENCE

According to the American Speech-Language-Hearing Association (n.d.), "the determination of incidence and prevalence of intellectual disability (ID) is **complicated** because researchers of ID do not use a uniform operational definition when selecting and identifying individuals with ID." Still, certain statistics may be identified regarding its occurrence among the population.

Locally	*Internationally*
Intellectual Disability ● Our World in Data (2023) quotes the Global Burden of Disease Study (2019), stating that for every 100 people (both men and women) in the Philippines, there is a **0.9% prevalence** of developmental intellectual disability, with a notable 1.1% prevalence in females, and a 0.7% in males. ● The Department of Health (DOH) considers dental caries or tooth decay a "silent epidemic," affecting as many as	**Intellectual Disability** ● Intellectual disability has an overall general population prevalence of **approximately 1%,** and prevalence rates vary by age. The prevalence of severe intellectual disability is approximately 6 per 1,000. ● The prevalence of intellectual disabilities worldwide was found to be 1%, with 75% to 90% of individuals having mild intellectual disabilities ● The prevalence of severe intellectual disability is approximately 0.6% ● Prevalence in all levels is almost 2 times greater in lower-income and middle-income countries than in high-income countries ● According to the American Speech-Language-Hearing Association (n.d.) who quotes L. L. Anderson et al. (2019), the **overall prevalence of ID** was estimated to be **11.0 to 13.4 per 1000 children and adolescents**. The authors also quoted the U.S. Department of Education (2021) in stating that "of the children aged 6–21 years served under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA), **6.7% of students were identified with ID.**"

73 million Filipinos.	• ASHA (n.d.) also quotes L. L. Anderson et al. (2019) and McKenzie et al. (2016) who state that in the United States, the prevalence of ID is reported to be **7.9 per 1,000 in adults**, while the global prevalence in adults is estimated to be 0.05% to 0.08%. • The risk of intellectual disabilities is **almost doubled in lower-income and middle income countries** than in high-income countries. • **Males** are notably **more likely to be diagnosed** with an intellectual disability than women. The American Speech-Language-Hearing Association (n.d.) quotes Maulik et al. (2013), stating that "based on data from the 2011 meta-analysis of international studies, the female-to-male ratio of children and adolescents with ID varied between 0.4 and 1.0 (i.e., **four to 10 females with ID for every 10 males with the condition**)" Added Note: • The American Speech-Language-Hearing Association (n.d.) quotes Maulik et al. (2013), stating that "based on data from the 2011 meta-analysis of international studies, the female-to-male ratio of children and adolescents with ID varied between 0.4 and 1.0 (i.e., **four to 10 females with ID for every 10 males with the condition**)" • The American Speech-Language-Hearing Association (n.d.) quotes the U.S. Department of Education (2021), stating that according to the 42nd Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act (IDEA), the percentages of students (aged 6 to 21 years old) who receive Disability services for the Intellectual Disability Category within each racial/ethnic group are the following: ○ American Indian/Alaska Native: 6.6% ○ Asian: 6.8% ○ Black/African American: 9.7% ○ Hispanic/Latino: 6.5% ○ Native Hawaiian or Other Pacific Islander: 6.8%

	○ White: 5.8% ○ Two or more races: 5.3% However, this **evidence is strongly debated due to the risk of inherent assessment bias**, and so may not truly represent the proportionality of ID among students. **Specified Intellectual Disability: Global Development Delay (GDD)** ● According to a report from the American Academy of Neurology, "Global developmental delay is common and **affects 1% to 3% of children**". **Unspecified Intellectual Disability** ● Little information was found about the prevalence of Unspecified Intellectual Disability.

SIGNS, SYMPTOMS, PATHOMECHANICS

Manifestations that the **Physician/Allied Health Professional** Perceive	**Intellectual Disability (ID)** ● Delayed Language Acquisition ● Deficits in intellectual functions, such as reasoning, problem-solving, planning, abstract thinking, judgment, academic learning, and learning from experience, confirmed by both clinical assessment and individualized, standardized intelligence testing. ● Deficits in adaptive functioning that result in failure to meet developmental and sociocultural standards for personal independence and social responsibility. Without ongoing support, the adaptive deficits limit functioning in one or more activities of daily life, such as communication, social participation, and independent living, across multiple environments, such as home, school, work, and community. ● Onset of intellectual and adaptive deficits during the developmental period. **Specified Intellectual Disability: Global Development Delay (GDD)**

	● This category is diagnosed when an individual fails to meet expected developmental milestones in several areas of intellectual functioning and applies to individuals who are unable to undergo systematic assessments of intellectual functioning, including children who are too young to participate in standardized testing. ● Children with GDD usually take longer to acquire new skills from the early years. They may be lacking the foundational skills required to learn, and acquiring these skills may take longer than their peers. ● GDD may impact a child by limiting their ability to: ○ Understand and retain information ○ Problem solve ○ Interpret social cues and social awareness ○ Respond appropriately to others ○ Gain personal independence and self-care skills ○ Navigate their environment through movement (gross and fine motor skills) ○ Interact and play with their same-aged peers
Manifestations that the **Parents/Significant Others** Perceive	**Intellectual Disability (ID)** ● Challenges in everyday skills, social interactions, and independence. ● Social sensitivities continue to impact parents of children with intellectual disabilities. Although raising children is a recognized societal role for parents with intellectual disabilities, there is a prevailing emphasis on the **perception that their parenting abilities are limited**. Additionally, parents of children with intellectual disabilities often **experience the strain of strained family ties**. ● The following aspects of family life are impacted by an intellectual disability: **leisure time spent together as a family, money, parents' physical and mental health, marriage connections, and interactions with friends, neighbors, and family.** Having an intellectually disabled child comes with a lot of challenges that can negatively impact parents and the way their family functions. Significant stress experienced by all family members, family members' physical and mental health, ignorance or indifference to the needs of other

	children, and strained sibling relationships are just a few of the ways that family lives are impacted.
Manifestations that the **Patient** Experiences	In general, the patient experiences a variety of manifestations, depending on the severity of their condition and the specific challenge areas they exhibit. However, patients with Intellectual Disabilities often confront the collective challenge of **societal discrimination** - experiencing stigmatization, limited educational and employment opportunities, social isolation, negative attitudes towards them, and inadequate access to healthcare and legal resources. More specific manifestations for each condition may include: **Intellectual Disability (ID)** ● Delayed or slowed learning of any kind (such as in school or from real-life experiences). ● Slowed reading speed. ● Difficulties with reasoning and logic. ● Problems with judgment and critical thinking. ● Trouble using problem-solving and planning abilities. ● Distractibility and difficulty focusing. ● Little or no fear or apprehension of new people (lack of “stranger danger” behaviors). ● Needing help from parental figures or other caregivers with basic daily activities (bathing, using the bathroom, etc.) past the expected age. ● Difficulty learning how to do chores or other common tasks. **Specified Intellectual Disability: Global Developmental Delay (GDD)** ● The child is late in sitting up, crawling, walking ● Difficulty remembering things. ● Limited reasoning or conceptual abilities ● Fine/gross motor difficulties ● Poor social skills/judgment

	● Aggressive behavior as a coping skill ● Communication problems
Structural & Anatomical Changes	● Abnormalities in overall **brain volume**, such as smaller total brain volume, reduced cortical thickness, and atypical gyrification patterns compared to typically developing individuals. ● Regional differences in **gray matter volume**, such as increased gray matter in certain frontal and occipital regions but decreases in other areas. ● Dysmorphic features like **microcephaly** (small head size) or abnormal skull shapes that may indicate an underlying genetic or developmental disorder. ● **Neurotransmitter abnormalities**, like reduced serotonin synthesis, are important for brain development and function. ● Pathology of **dendrites and dendritic spines**, which are neuronal structures important for connectivity. Alterations here can disrupt communication between neurons. ● Abnormalities in **cortical minicolumns and inhibitory interneurons**, which are functional processing units in the brain cortex. ● Anomalies in the **corpus callosum**, the structure connecting the brain's left and right hemispheres. This includes thinning or partial agenesis (incomplete development).

POSSIBLE SPEECH-LANGUAGE PROBLEMS ASSOCIATED WITH THE CONDITION

Possible SLP Areas	● **Receptive and Expressive Language:** delayed acquisition, deficits in RL and EL ● **Cognition:** poor executive functioning and working memory deficits; problems with reasoning, problem-solving, planning, and abstract thinking ● **Literacy:** slow progress, challenges in higher-level comprehension
Difficulties of the Areas	**Receptive and Expressive Language** ● Variability in language development ● According to the American Speech-Language-Hearing Association (n.d.), people with ID may have

	limitations in **language and communication skills** ○ more concrete and less complex spoken language (if used), compared with same-age peers ○ limited vocabulary and grammatical skills ○ receptive language that may be limited to comprehension of simple speech and gestures ○ communication that may occur through nonspoken means only—such as gestures, signs, facial expressions, or aided systems (e.g., AAC) ● The American Speech-Language-Hearing Association (n.d.) also states they may have difficulties with **pragmatic skills** ○ challenges with social judgment and decision making ○ difficulty understanding social cues and rules ○ emotional and behavioral regulation difficulties that may adversely affect social interactions **Cognition** ● Uneven cognitive profile, potential deficits in executive functioning ○ Problems with **planning, strategizing, priority setting, and cognitive flexibilty,** manifesting in difficulties with daily life activities like personal care, employment, health care, legal decisions, and household tasks ● Problems with short term memory (selective attention, remembering visual and audiological information, etc.) **Literacy** ● Difficulties with pre-academic and academic learning (reading, writing, mathematics)

TYPES, COURSE, & PROGNOSIS

Types of ID	**Mild: IQ range of 50 to 60** <u>Conceptual Domain</u> ● Preschool Children: **No obvious conceptual differences**

	● School-Aged and Adults: **difficulties with learning academic skills** (reading, writing, arithmetic, time, and money); support needed for one or more areas in academics ● Adults: Impairments in **abstract thinking, executive functioning, short term memory**, and functional use of academic skills; a more concrete approach to problems and solutions <u>Social Domain</u> ● **Immature in social interactions**; communication, conversation and language is **more concrete and immature** than expected for age ● Noticable **difficulty regulating emotions and behaviors** in an age-appropriate manner ● **Limited understanding of risk** in social situations, immature social judgement, gullibility <u>Practical Domain</u> ● May function appropriately in personal care and recreational activities (although support needed for skills in judgement and organization in recreational activities) ● Support is needed for complex daily tasks (i.e., grocery shopping, transportation, home and child care, food preparation, banking and money management, legal and health care decisions, child-rearing and raising a family) ● Employment may be found in jobs **not emphasizing conceptual skills** **Moderate: IQ range of 35 to 49** <u>Conceptual Domain</u> ● General lagging of conceptual skills ● Preschool Children: slow development of language and pre-academic skills ● School-age Children: slowly developing academic skills (reading, writing, mathematics, etc.); skills are limited compared to peers ● Adults: **academic skills are at an elementary level**, support needed for all academic skills in work and life; daily assistance is needed to perform activities of daily living <u>Social Domain</u> ● Noticable differences from peers in social and communicative behaviors ● **Uses spoken language** as primary method of communicating, but is **generally simpler than peers** ● May develop relationships, but may **not perceive social cues accurately**; friendships with typical peers may be affected by social limitations

	● **Limited social judgement and decision-making skills**, significant social and communicative support is needed for life decisions <u>Practical Domain</u> ● Adults **may perform personal care tasks** (eating, dressing, elimination, hygiene), recreational skills, and household tasks, but **extensive teaching and reminders** may be needed to become independent in these areas ● Independent employment involving jobs that need limited conceptual and communication skills may be achieved, but support is needed from others for managing social expectations, job complexities and other responsibilities like scheduling and transport ● Maladaptive behavior may be present in a minority - may cause social problems **Severe: IQ range of 20 to 34** <u>Conceptual Domain</u> ● Attainment of conceptual skills is limited ● **Little understanding of written language and concepts** of numbers, money, quantity, and time; extensive support from caretakers for problem solving in life <u>Social Domain</u> ● Limited vocabulary and grammar in spoken language; single words or phrases focusing on present events, supplemented with AAC ● Language is for social communication rather than explication ● Understand simple speech and nonverbal gestures ● Relationships with family members and familiar others are for pleasure and help <u>Practical Domain</u> ● Requires support for all activities of daily living (meals, dressing, bathing, elimination) ● Needs supervision at all times; cannot make responsible decisions for self or others ● Participation in home, recreational or work tasks require extensive ongoing support and teaching ● Maladaptive behavior (including self-injury) may be present in a minority **Profound: IQ below 20** <u>Conceptual Domain</u>

	● Conceptual skills involve the physical world than symbolic processes ● May use objects in a goal-directed fashion for self-care, work or recreation, but co-occurring motor and sensory impairments may hinder its functional use ● Visuospatial skills (matching and sorting based on physical characteristics) may be acquired <u>Social Domain</u> ● Very limited understanding of symbolic communication in speech or gestures ● May understand simple instructions or gestures ● Expression is through nonverbal, nonsymbolic communication and emotional cues ● Enjoys relationships with well-known family members, caretakers, and familiar others, though co-occurring sensory and physical impairments may hinder social activities <u>Practical Domain</u> ● Dependent on others for all aspects of daily care (physical, health, and safety), although may still participate in a few ● If no severe physical impairments are present, they may assist in simple home tasks (carrying plates to the table, etc.) ● Recreation may involve listening to music, watching movies, going for walks, participating in water activities, or simple actions with objects, but requires extensive support in doing so; co-occurring physical and sensory impairments are frequent barriers
Types of GDD	● Cognitive Delay ○ Cognitive delays affect a child's intellectual functioning and awareness, often becoming apparent once formal schooling begins. Learning difficulties, communication challenges, and problems with social play may arise. While sometimes caused by brain injuries, infections, or genetic disorders, the specific reason is often unknown. ● Sensorimotor Delay ○ Interfere with coordination of large and small muscle groups ○ Can affect gross motor skills like crawling or fine motor skills like grasping toys ○ May be caused by genetic conditions, muscle disorders, limb length differences, etc. ● Speech Language Delay

	○ Speech delays encompass receptive and expressive language disorders, as well as oral motor issues, which can arise from physiological factors like brain damage or genetic syndromes, environmental factors, or unknown causes. ● Socioemotional Delay ○ Social, emotional, and behavioral delays frequently co-occur with disorders like autism spectrum disorder and ADHD. Processing differences lead to struggles with social skills, emotional regulation, adapting to change, and prolonged tantrums. Supports like environment modification and coping skill development are beneficial.
Course	According to the American Psychiatric Association (2013), the development and progression of Intellectual Disorders vary. The authors state that "the age and characteristics at onset depend on the etiology and severity of brain function." For example, the authors state that delayed milestones present at 2 years old may be indicative of severe intellectual disability, while milder forms may not appear until formal schooling. Intellectual disability associated with genetic syndromes like Down Syndrome may also have physical characteristics or behavioral phenotypes (specific behaviors associated with a particular disorder). Onset may also be sudden for acquired forms of ID, resulting from certain illnesses (i.e., meningitis, encephalitis, head trauma). The authors state that generally, **ID is nonprogressive,** although co-occurring genetic disorders **may have periods of worsening then stabilization** (i.e., Rett Syndrome), or **progressive worsening over time** (i.e., Sanfilippo Syndrome). Intellectual Disability after childhood is **generally lifelong**, but severity levels may be influenced by co-occurring medical/genetic conditions, early detection and intervention, and the amount of support provided.
Outcome if Left Treated and/or Untreated	● The outcome, if left untreated, emphasizes the importance of individualized interventions rather than focusing solely on diagnostic labels. **Adaptive behavior deficits may persist, affecting academic performance and daily living skills**. This is an important reminder that clinicians need to

	determine the child's individual needs rather than focusing too much on diagnostic labels. (Rhea Paul, 1978, pg. 259). ○ Adaptive behavior comprises skills of daily living, for example, conceptual skills—language and literacy; money, time, and number concepts; and self-direction; social skills—interpersonal skills, social responsibility, self-esteem, gullibility, naïveté, social problem-solving, and the ability to follow rules/obey laws and to avoid being victimized; and practical skills—activities of daily living (personal care), occupational skills, health care, travel/transportation, schedules/routines, safety, use of money, and use of the telephone. (Rhea Paul, 1978, pg. 258) ● If left **untreated**, individuals with IDs are more likely to experience the following: ○ **Academic difficulties**: Children with IDs often struggle in school due to cognitive impairments that affect their ability to learn and retain information. They may require specialized instruction and support to succeed academically. ○ **Social and emotional challenges**: Individuals with IDs may have difficulty developing and maintaining relationships, understanding social cues, and managing their emotions. This can lead to social isolation, loneliness, and depression. ○ **Difficulties with daily living**: Many people with IDs need assistance with activities of daily living (ADLs), such as dressing, bathing, and eating. They may also have difficulty managing their finances, transportation, and healthcare. ○ **Increased risk of health problems**: Individuals with IDs are at an increased risk for certain health conditions, such as obesity, diabetes, and heart disease. This is partly due to limited access to healthcare and healthy lifestyle choices. ● In contrast, **early intervention and ongoing support** can significantly improve the lives of people with IDs. Some of the potential benefits include: ○ **Improved academic achievement**: With appropriate support, children with IDs can learn and succeed in school. They may be able to graduate from high school and even pursue higher education.

	○ **Enhanced social and emotional well-being**: Therapy and social skills training can help individuals with IDs develop and maintain healthy relationships, understand social cues, and manage their emotions. ○ **Greater independence**: With support, many people with IDs can learn to live independently and manage their own lives. This can include tasks such as cooking, cleaning, and using public transportation. ○ **Improved health outcomes**: Access to healthcare and healthy lifestyle choices can help people with IDs live longer and healthier lives.

HEALTHCARE RESOURCES AVAILABLE FOR INTELLECTUAL DISORDERS

Medical Resources and Interventions
● There is **no known medical cure** for patients with intellectual disorders. But, upon investigation, the key healthcare elements that may help in managing the condition include **formal vision and hearing testing, chromosomal microarray, Fragile-X DNA testing, and first-tier testing for treatable inborn errors of metabolism**. Brain imaging is also recommended in the presence of specific neurological findings. ● In the case that a patient may experience certain behavioral side effects of Intellectual Disability, medication (specifically antipsychotics, and the like) may be used to manage such challenging behaviors such as excessive aggression.

SLP THERAPY & EVALUATION

Condition	*Strategies*
Intellectual Disorder	● Although SLPs may not diagnose ID, SLP evaluations can help in assessing skills that can help with diagnosis. SLP evaluation areas include language, cognition, and literacy. These may include the assessment of:

	○ Nonsymbolic (e.g., gestures, vocalizations, problem behaviors) and/or symbolic (e.g., words, signs, pictures) communication ○ Play skills ○ Social interaction and social communication ○ Spoken and written language ○ Speech production ○ Oral motor skills ○ Swallowing ○ Fluency ○ Voice and resonance ● Evaluation materials involve culturally appropriate, psychometrically sound measures. ● Individualized interventions must target language, cognitive deficits, and literacy challenges. It involves a variety of communication partners (peers and adults) in different settings and may address the following areas: ○ early communication skills (e.g., pointing, turn-taking, joint attention) ○ social interaction and play ○ pragmatic conventions (spoken and unspoken) for communicating appropriately in varied situations ○ spoken and written language for social, educational, and vocational functions ○ literacy ○ speech production ○ fluency ○ voice and resonance ○ increased complexity of spoken and written language for more effective communication ○ contextual factors that influence the individual's relative success or difficulty in a given activity ○ compensatory communication techniques and strategies, including the use of AAC or other assistive technology ○ feeding and swallowing

	Here are some examples of assessments that could be used in evaluating the various skill areas for individuals with intellectual disability: **Language:** ➔ Clinical Evaluation of Language Fundamentals (CELF) - assesses receptive and expressive language skills in semantic, morphological, syntactic, and pragmatic areas (American Speech-Language-Hearing Association, 2023). ➔ Preschool Language Scales (PLS) – evaluates auditory comprehension and expressive communication for children birth to 7 years 11 months (Zimmerman et al., 2011). ➔ Peabody Picture Vocabulary Test (PPVT) – measures receptive vocabulary skills through picture identification (Dunn & Dunn, 2007). ➔ Test of Auditory Comprehension of Language (TACL) – assesses language comprehension abilities in vocabulary, grammatical morphemes, and syntactic structures (Carrow-Woolfolk, 2014). **Cognition:** ➔ Wechsler Intelligence Scale for Children (WISC) – assesses cognitive abilities like verbal comprehension, visual spatial skills, working memory, and processing speed (Wechsler, 2014). ➔ Kaufman Assessment Battery for Children (KABC) – measures sequential and simultaneous processing abilities related to problem solving (Kaufman & Kaufman, 2018). ➔ Leiter International Performance Scale – evaluates nonverbal cognitive abilities through entirely nonverbal administration (Roid & Koch, 2017). ➔ Stanford-Binet Intelligence Scales – assesses verbal and nonverbal cognitive abilities, such as fluid reasoning and knowledge (Roid, 2003). **Literacy:** ➔ Test of Early Reading Ability (TERA) – measures alphabet knowledge, convention skills, and comprehension of print (Reid et al., 2001). ➔ Test of Early Written Language (TEWL) – evaluates writing abilities like vocabulary, syntax, and semantics (Hresko et al., 1999). ➔ Test of Written Language (TOWL) – assesses written language skills in contrived and spontaneous writing (Hammill & Larsen, 2009).

	➔ Woodcock Reading Mastery Tests - measures reading comprehension, basic reading skills, and reading fluency (Woodcock, 2011). **Speech production:** ➔ Goldman Fristoe Test of Articulation- Third Edition (GFTA-3) - assesses articulation of consonant sounds in single words (Goldman & Fristoe, 2015). ➔ Khan-Lewis Phonological Analysis (KLPA-3) – analyzes phonological processes in multiple contexts (Khan & Lewis, 2002). ➔ Structured Photographic Articulation Test- Diagnostic (SPAT-D) – uses pictured words to test consonant and vowel sounds (Dawson et al., 2003). **Oral motor skills:** ➔ Oral Speech Mechanism Screening Examination (OSMSE-3) – screens structure/function of orofacial mechanism (St. Louis & Ruscello, 2021). ➔ Oral Motor and Feeding Rating Scales (OMFS) – evaluates oral motor and feeding in children (Reilly et al., 2000). ➔ Schedule for Oral Motor Assessment (SOMA) – assesses oral motor functions (Reilly et al., 1998). **Fluency:** ➔ Stuttering Severity Instrument-Fourth Edition (SSI-4) – rates aspects of stuttering like frequency and duration (Tilstra & Yaruss, 2020). ➔ Riley Stuttering Severity Scale (SSS) – rates motor and physical aspects of stuttering (Riley, 2009). **Voice and resonance:** ➔ CAPE-V - Child/Teen Voice Evaluation – perceptual assessment of voice in children (Zraick et al., 2011). ➔ Phonatory Aerodynamic System Model 6600 – measures vocal function during phonation (KayPENTAX, 2022). ➔ Nasometer II Model 6450 – measures acoustic correlates of nasality (KayPENTAX, 2022).

GDD	• Speech therapy, occupational therapy, and ABA (Applied Behaviour Analysis) therapy are common treatments available to support a child with GDD. Some children might also see a physiotherapist for motor skills development. • Early Intervention Services

THE HEALTHCARE TEAM FOR INTELLECTUAL DISORDERS

PHYSICIANS	• Neurologists and neurodevelopmental pediatricians may assist in the diagnosis of intellectual disability by referring early intervention programs
PSYCHOLOGISTS	• May oversee the planning of behavioral interventions, and provide psychological and intellectual assessment and treatment regarding mental and emotional health
AUDIOLOGISTS	• May assist in detecting co-occurring hearing loss
SPEECH-LANGUAGE PATHOLOGISTS	• May assist in managing language delays and aid in pragmatic and feeding problems
EDUCATORS	• Furnish educational evaluations and provide school support, as well as design and implement specialized learning and behavior programs
OCCUPATIONAL THERAPISTS	• May assist in managing comorbidities in children with accompanying motor deficits, treating motor and sensory functions related to performing daily tasks
COUNSELORS	• May provide counseling not only for the patient but also for the family to help manage and cope with their child's diagnosis

NUTRITIONISTS	● Assist in treating undernutrition and creating food plans that they follow
SOCIAL WORKERS	● May assist in reducing environmental deprivation and identify key resources

MEDICAL PRECAUTIONS REGARDING SLP THERAPY

Protecting the Clinician and the Client	SLPs should be aware of any **co-occurring medical conditions or sensitivities** affecting the individual they are caring for. Extra consideration of a patient's behavioral tendencies, communication challenges, and potential risks during therapy sessions must also be done so accommodations for these needs and risks may be made (i.e., cushioning walls, protection on table and chair corners, etc.).
Preventive Measures	Understanding the individual's medical and behavioral history and baseline functioning, adapting therapy to their specific needs, and ensuring a safe physical environment during sessions are necessary measures one should take throughout the therapeutic process. Building proper rapport, and conducting a proper assessment of the client's skills and individualized needs is essential in creating a positive healthcare relationship.

SUPPORT SYSTEMS FOR PEOPLE WITH DENTAL CONDITIONS AND DENTAL HYGIENE

Supportive Legislation and Programs	
Local Legislature and Programs	● National Council on Disability Affairs (NCDA): Formulates policies and programs for PWDs ● Special Education (SPED) programs: Offered in public schools for children with IDs ● Philippine Federation of Persons with Disabilities (Pfed): Advocacy group pushing for PWD rights

International Legislature and Programs	● United Nations Convention on the Rights of Persons with Disabilities (CRPD): Sets legal framework for promoting and protecting the rights of people with disabilities ● Special Olympics: Promotes social inclusion through sports for people with intellectual disabilities
Support Organizations	
American Association on Intellectual and Developmental Disabilities (AAIDD)	● Provides support and information, emphasizing a multidimensional understanding of intellectual disability based on the disability construct. ○ Provides Educational programs, Training programs, and Research, among others
The Arc	● United States community-based organization advocating for and with people with intellectual and developmental disabilities (IDD) and serving them and their families, envisioning that every individual and family living with IDD in the United States has access to the information, advocacy, and skills they need to support their full inclusion and participation in the community throughout their lifetimes. ● Provides Referral programs, Training programs (for people and families with IDD, criminal justice officials, educators, etc.), Employment programs, and Life plan training programs, among others
Philippine Association for Intellectual Disabilities, Inc. (PAFID)	● Works for the development of children with intellectual and developmental delays through the promotion of programs for prevention, rehabilitation, intervention, training, education, research, and management. ● Provides Awareness Programs, Enrichment Programs, Educational Conferences

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