Diagnostic and Psychological Assessment of ASD

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Reasons for early diagnosis in BC

- BC's Ministry of Health and MCFD
  - Standardized diagnostic procedure
    - Public and private
    - Diagnosis is tied to funding for early intervention
      - Under 6 years ($22,000/yr)
      - Over 6 years ($6000/yr)
    - Diagnosis is also needed for special designation in the school system for MOE
      - Also funding source for SEA and other educational supports and services

Comprehensive Diagnostic Assessment of ASD

- **Medical**
- **Speech-Language-Communication Assessment**
- **Psychological**

- **If needed**
- **Occupational**
  - Sensory-motor and sensory issues
- **Neurological**
  - Seizures , Tourette's
- **Psychiatric**
  - prominent self-injurious or aggressive behaviours; significant mood or anxiety symptoms; indications of attentional and/or hyperactive symptoms; and, evidence of tics and/or obsessive-compulsive symptoms.

Medical Assessment

- The medical assessment of children being evaluated for ASD needs to take into consideration
  - both the medical diagnoses that commonly occur as comorbid conditions with autism (e.g. Fragile X, Tuberous Sclerosis)
  - other health problems which might be overlooked when evaluating a child for ASD (e.g. asthma, encopresis, enuresis)

Medical Assessment

- i) to provide a general profile of the child's health status, particularly as it may impact on the presentation and treatment of the ASD;
- ii) to rule out other medical conditions sometimes confused with ASD (such as hearing loss, Landau-Kleffner syndrome, lead and mercury toxicity, etc.) as causal factors in the child's presentation;
- iii) to identify and assess any associated medical conditions, some of which are seen more commonly in children with ASD. It is important to diagnose and treat some comorbid disorders as early as possible (e.g. seizure disorders, hypothyroidism, anemia, metabolic disorders, etc.);
- iv) to ascertain the need for additional specialty consultations (e.g. geneticists, pediatric neurologists, dietitian-nutritionist, etc.) and arrange for follow-up evaluations.

Medical Assessment

- A detailed physical examination should be completed for every child with query ASD. Critical components of the physical examination include the following:
- i) longitudinal measurements of head circumference (particularly for macrocephaly);
- ii) examination for dysmorphic features (including posteriorly rotated ears, long face, large ears, and large testes associated with Fragile X syndrome (FraX));
- iii) examination for neurocutaneous abnormalities, (particularly for hypopigmented lesions/ash leaf macules and facial angiofibromas associated with tuberous sclerosis);
- iv) neurologic examination of gait, tone, reflexes, cranial nerves (including the ataxic gait and broad mouth with persistent smile associated with Angelman Syndrome).

Speech-Language-Communication Assessment

- Speech-Language-Communication assessment should evaluate the child's functioning in the following areas, as developmentally appropriate:
- i) range of communicative functions;
- ii) sophistication of communicative means;
- iii) frequency of initiation of communication;
- iv) use of repair strategies;
- v) use of social-affective signals (such as directed eye gaze/facial expression);
- vi) capacity to use symbols in language and play;
- vii) receptive and expressive abilities in all aspects of language: · syntax; · semantics; · morphology; and, · pragmatics;
- viii) speech articulation/phonology and oral-motor skills, including feeding;
- ix) voice quality;
- x) prosody;
- xi) unconventional verbal behaviour (like echolalia or perseverative speech).

Psychological Assessment

- Additional information reviewed should include:
- i) assessments from other disciplines;
- Ii) community assessments and reports;
- iii) reports and observations from other caregivers (i.e. primary care physician, IDP/CDC workers, public health nurse).

Psychological Assessment

- History obtained from multiple sources of information should include at least the following:
- i) presenting concerns;
- ii) development, pregnancy and perinatal history (including in utero toxin exposures); communicative, motor, and adaptive milestones; history of developmental regression; and, overall developmental level in areas of:" social interaction; " communication/play; " restricted and unusual interests and behaviours; and, " adaptive behaviour;
- iii) primary sensory impairments (hearing or vision);
- iv) neurological history (seizures, encephalopathic events);
- v) behavioural issues such as aggression, self-injury, sleep disturbance, eating problems, and pica;
- vi) family history of developmental, neurologic, or psychiatric disorders;
- vii) psychosocial stressors and coping;
- viii) intervention history.

Required components of diagnostic assessment in BC

- A standardized diagnostic interview with the primary caregiver/parent(s)
- A standardized observation of social and communicative behaviour and play are necessary components of a diagnostic assessment for ASD
  - i) the Autism Diagnostic Interview-Revised (ADI-R);
  - ii) the Autism Diagnostic Observation Schedule-Generic (ADOS-G) (modules 1 and 2); *new version out soon*
  - iii) the Childhood Autism Rating Scale (CARS).

Differential diagnosis

- Every child with query ASD should have a psychological assessment.
  - A number of developmental disabilities have associated autistic features. Children with a intellectual handicap, language and LD, or emotional disturbance may manifest autism-like features at some time in their early development
- In order to make a differential diagnosis, it is important that the psychologist doing the assessment has a thorough understanding of how these disabilities present themselves in the very young.

ID and ASD

- Psychological assessment assists in making or confirming a diagnosis, as well as measuring cognitive skills, adaptive functioning, and behaviour.
- Although cognitive patterns alone cannot confirm or exclude a diagnosis of ASD, It is important in autism to distinguish which aspects of behaviour are characteristic of the disorder and which are due to a lower intellectual level.

Test selection

- It is unlikely that any single instrument will assess the full range of skills and deficits. The child's developmental level, language skills, ability to relate, and length of attention span should influence test selection.
- Selecting a specific instrument should
  - i) be appropriate to the mental and chronological age of the child;
  - ii) provide an appropriate range of standard scores based on current norms;
  - iii) provide independent measures of verbal and nonverbal abilities;
  - iv) provide an overall index of ability;
  - v) consider the child's ability to remember, solve problems, and develop concepts;
  - vi) measure motor and visual-motor skills;
  - vii) assess social cognition.

Cognitive functioning

- Tests of cognitive functioning suitable for use with preschool children with ASD may include one of
  - i) Weschler Scales of Intelligence;
  - ii) Stanford Binet Intelligence Scale;
  - iii) Leiter International Performance Scale (revised norms);
  - iv) Bayley Scales of Infant Development;
  - v) Mullen Scales of Early Learning;
  - vi) The Infant Psychological Development Scale.

ID and Adaptive functioning

- Every child with an ASD should have an assessment of adaptive functioning using standardized norm-referenced instruments
  - i) Vineland Adaptive Behavior Scales;
  - ii) Scales of Independent Behavior – Revised;
  - iii) AAMR Adaptive Behavior Scales

Common challenges to assessment

- Rapport and tolerance for testing
- Receptive and expressive language deficits
- Early history (perinatal, postnatal) and confounding factors
- Comorbid conditions (e.g., ADHD)
- Family history is complex
  - Genetic history is a red flag

Reasons to do a psychoeducational assessment on a regular basis

- Testing behavior changes and results become more reliable
- Profile is erratic and changes quite dramatically with intervention
- Intervention improves cognitive development

For more info on formal diagnosis for funding in BC

- http://www.mcf.gov.bc.ca/autism/assess_diagnosis.htm

Screening for ASD

- Autism Quotient (AQ) Toddler-Adults
  - (Carrie, Ayeung & Baron-Cohen, 201)
    - 10 item for practical clinical utility
    - Sensitivity ranged from .88-.95 and specificity .91-.97
- Social Responsiveness Scale (SRS) 4-18yrs
  - (Aldridge et al., 2012)
    - Parent and teacher SRS scores were subsequently compared with diagnostic outcome. Sensitivity was high (91% for parent report; 84% for teacher report), however specificity was much lower (8% for parent report; 41% for teacher report)

Assessment of executive functions

- A significant problem that interferes with learning and adaptive function
- Planning, flexibility in thinking, shifting attention, inhibition
  - Paper and pencil assessment measures not very good
  - People with ASD perform better on computerized versions of certain EF tasks (Kenworthy et al., 2008)
  - Ecologically valid tasks are needed (Rajendran et al., 2011)

Assessment of awareness knowledge, and acceptance of ASD in others

- Parents, teachers, peers and individuals
  - Special education teachers serving children with ASD had low self-reported knowledge and practices in ASD (Hendricks, 2011)
  - What do I think of myself? What do I think of you? And what do I think, you think of me? (Jyotsna, 2004)

Books on assessment of ASD

- Assessment of students with autism spectrum disorders in the school. Schwarz, April J.; In: School success for kids with **autism. Egel, Andrew L. (Ed.); Holman, Katherine C. (Ed.); Barthold, Christine H. (Ed.); Waco, TX, US: Prufrock Press, 2012. pp. 19-47.**
- Sansosti, F. J.; Powell-Smith, K. A.; Cowan, R. J. (2010). High-functioning **autism/Asperger syndrome in schools: Assessment and intervention; New York: The Guilford Press**
- Goldstein, Sam (Ed); Naglieri, Jack A. (Ed); Ozonoff, Sally (Ed). (2009). **Assessment of autism spectrum disorders; New York: Guilford Press,**