The Biopsychosocial Approach and Application to START Practices

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Jill Hinton, PhD, CSS Clinical Director
Karen Weigle, PhD, CSS Associate Director

Today's Agenda

The Biopsychosocial Approach and Application to START Practices

Jill Hinton, PhD, Karen Weigle, PhD, and Jennifer McLaren, MD

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<td>Biopsychosocial Overview: Part I</td>
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<td>Report back to large group</td>
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30 minute break

Biopsychosocial Vulnerabilities: What Are They?

- Biological conditions
- Psychological conditions
- Social factors

- Part of the person or their history of experiences
- Change how that person functions and how that person responds to stressors and life events
- All 3 interact in myriad ways to impact daily functioning
The Biopsychosocial Model of Health

In the Biopsychosocial Model of Health, vulnerabilities impact the person and changes in their functioning. A START Coordinator can help ask questions about all possible/potential vulnerabilities contributing to the person's difficulties and help the system identify as many vulnerabilities as possible so that the team can begin to work on preventing crises that result from vulnerabilities not being recognized, treated, or addressed.

Why is Biopsychosocial Formulation Important?

Putting the behavior and symptoms in context, promoting understanding and acceptance, empathizing, guiding interventions, and helping identify strengths are important aspects of biopsychosocial formulation.
Interactions and Interplay Between and Among Vulnerabilities

- Complex
- History is critical
- Never believe you have it "figured out"!
- Always ask more questions and think about more possibilities

Polling Question

True or False:

The biopsychosocial factors operate independently of each other.
Where to Start?

- Collateral data is key!!
- Understand the individual and their baseline functioning
- Understand the change from their baseline functioning

Look Beyond The Challenging Behavior!

- Important to look deeper than the behavioral problem:
  - Think biopsychosocial
    - Think biological first
    - Cause or contribute to the individual's presentation

Look Beyond the Challenging Behavior!

- Patients with ID may be poor reporters of their own health problems
- Physical problems are often expressed behaviorally
- Developmental features alter the manifestation of psychological and psychiatric symptoms
- Assess new behaviors
- Assess change in frequency or intensity of previous behaviors
- Aggression, self-injury, tics, stereotypies, obsessive thoughts and compulsive behaviors, levels of attention, hyperactivity, impulsivity, fears and phobias, etc.
Biological Factors

- Physical health
- Genetics
- Prenatal environment
- Medications

Biological Factors: Physical Health

- Individuals with IDD have higher rates of medical problems
  - Poorer health, increased morbidity, and earlier mortality
- GI problems
  - Constipation
  - Gastroesophageal reflux
- Pain
  - Dental pain
  - Ear pain
- Seizures
- Sinus problems/headaches
- Sleep
- Infection
- Uncut toenails
- Vision/hearing impairment

Non-psychiatric health problems among psychiatric inpatients with Intellectual Disabilities. (Charlot et al., 2011)
Non-psychiatric Health Problems Among Psychiatric Inpatients with ID…

- 198 patients admitted to a specialized inpatient psychiatric unit
- 41% the medical issue seemed to be the cause of the problem behaviors leading to the psychiatric admission
- Most frequent medical comorbidities:
  - Constipation (60%)
  - Gastro-esophageal reflux disease (38%)
- Those admitted for inpatient psychiatric care exhibited high rates of medical problems, and had associated longer LOS… (Charlot et al., 2011)

Pain - Often Undertreated ....

- A 2013 systematic review: identify behavioral pain indicators in people with IDD
  - Motor activity
  - Facial activity
  - Social-emotional distress
  - Nonverbal vocal expression
- These indicators help clinicians to recognize pain in individuals with IDD especially when unique individual pain responses are also identified.
  (de Knegt et al., 2013)

Pain: Dental

- Dental disease: is among the most common health problems in adults with IDD
  - Difficulties in maintaining oral hygiene routines
  - Lack of access to dental care
  - Promote regular oral hygiene practices and other preventive care (eg, fluoride application) by a dental professional
Concomitant Medical Conditions With Acute Behavioral Crisis in ASD…

Retrospective study of adolescents/young adults with ASD hospitalized for severe challenging behaviors

- Most common medical etiologies for acute behavioral crises:
  - Organic causes (28%) - epilepsy & painful medical conditions
  - Environmental causes (25%) - including lack of treatment

- The management of these behavioral challenges requires a unified, multidisciplinary approach. (Guinchat et al., 2015)

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Biological Factors: Physical Health

- Sinus problems/headaches
- Sleep
- Infection
- Uncut toenails
- Vision/hearing impairment
  - Substantial changes in behavior and adaptive functioning
- Thyroid disease

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Biological Factors: Genetics

- Family History → Genetic Predisposition
  - 1st Degree Relatives: siblings and parents
  - Beyond 1st Degree

- Underlying Genetic Disorders
  - Some genetic disorders have increased risk of having a mental health or medical issues
Genetics: Fragile X

- FXS had significantly higher medication use
  - ¼ on stimulants, antipsychotics, or anticonvulsants;
- 44% had a neurology, cardiology, otolaryngology, or gastroenterology visit
- 25% had speech and language therapy; 39% had physical therapy
- 92% had an outpatient visit, 35% had an emergency room visit
FX associated with significantly increased use of multiple medications, medical services, and ↑ healthcare costs. Treatments to reduce this disease burden are urgently needed....

Current Medical Research and Opinion, 2016; 32:3, 405-416

Jennifer McLaren, MD

Genetics: Bipolar

Increased presentation of Bipolar Affective Disorder in certain genetic syndromes
- Fragile X
  - a mutation of the fragile X mental retardation 1 (FMR1) gene on the X chromosome, most commonly an increase in the number of CGG trinucleotide repeats
- Rubenstein-Taybi
  - microdeletion syndrome involving chromosomal segment 16p13.3
- Ring 22
  - abnormal chromosome 22 that forms a ring
- Prader-Willi
  - Abnormalities in proximal region of chromosome 15q11-13

Genetics: Psychotic Disorders

- Prader-Willi
  - Abnormalities in proximal region of chromosome 15q11-13
  - Associated with depressive psychosis
- Velocardiofacial Syndrome
- Turner’s Syndrome (XO Karyotype)
- PKU
- Klenefelter’s Syndrome (Karyotype 47, XXY)
- Autism Spectrum Disorder
Genetics: ASD and Psychosis

- Genetic
  - High heritability
  - Overlapping genes
    - BDNF, CHRNA7, DISC1, DRD2, FOXP2, HTR2A, HTR2A, MAOA, MTHFR, SLC6A3, TPH2
  - High number of shared copy number variants, deletions and duplications
    - GPHN, 22q11.2, 1q21.1 and 15q13.3

Biological Factors: Prenatal Environment

- Alcohol or drug exposure
- Parental age
- Gestational weight gain
- Maternal stress
- Prenatal viral infections
- Maternal micronutrient deficiencies

Biologic Factors: Medications

- Benefits
- Side effects and adverse drug reactions
- Drug interactions
- Polypharmacy
- Missed diagnosis
- Misdiagnosis
- Unrealistic expectations for medications
Concerning Practices

• Antipsychotics and polypharmacy have been prescribed to individuals with IDD at a high rate
  o Lack of research support
  o Without adequate monitoring

• Long-term use
  o The median length of polypharmacy in a group of commercially insured children with autism spectrum disorders was 346 days (Spencer et al, 2013).

Psychotropic Medications and IDD

• Lack of research on the safety, efficacy, and dosing parameters
  o Sensitive to side effects of medications
  o More likely to have adverse reactions
  o Treatment efficacy trials are conducted in highly controlled environments rather than real-world clinical settings
    • Many of these studies: exclude individuals with IDD

Concerning Practices: Antipsychotics

• Antipsychotic medications have concerning side effects
  o Weight gain
  o Metabolic abnormalities (e.g., insulin resistance, dyslipidemia, increased triglycerides)
  o Sedation
  o Tremor
  o Somnolence
  o Restlessness
  o Extrapyramidal Symptoms
  • How they affect the developing brain
    • Stricter oversight and improved clinical practice needed to reduce the harms of these medications
Psychotropics

- Psychotropics are commonly prescribed, but evidence to support their use is very limited.
- Medications that have evidence of efficacy: safety and tolerability are poorer than the general population.
- Challenges:
  - Wide range of phenotypic and genotypic heterogeneity of intellectual disability
  - Difficult measure drug effects on cognition
  - Short term studies
  - Studies do not generalize well
  - Need more research!

Factors \rightarrow Psychiatric Polypharmacy

Patient \rightarrow Caregiver \rightarrow Physician/Prescriber \rightarrow Polypharmacy \rightarrow System

(Freudenreich et al., 2012)

Disease Factors: "Biology"

If adverse drug effects were classified as a distinct disease, it would rank as the fifth leading cause of death in the US.

(Lazanu et al., 1998)

Medication-related problems/ADRs are estimated to cost the US $200 billion annually.

(Cameron, 1998)

- Missed diagnoses
- Missed diagnoses

(Freudenreich et al., 2012)
Patient & Caregiver Factors

- Insufficient adherence
- Personality style
- Consumer-choice paradigm
- Illness behavior

(Freudeneich et al., 2012)

Physician/Prescriber Factors

- Symptom-based prescribing
- Self-image as powerful healer
- Fear of patient dissatisfaction

Few healthcare professionals have the specialized training, expertise and skills to assess and treat individuals with IDD.

(World Health Organization, 2018)

(Freudeneich et al., 2012)

System Factors ➔ Psychiatric Polypharmacy

- Fragmented health care system
  - Individuals with IDD are involved with multiple, poorly integrated service systems, which leads to fragmented, inconsistent care and a limited understanding of how the individual is functioning in different environments.

- Outside pressures (other stakeholders)

(Freudeneich et al., 2012)
Important Things to Know and Ask the Prescriber

• What is each medicine supposed to do?
• What side effects to look out for?
• When the medicine might no longer be needed?
• What the options are to cut back on the number of medications or doses of medications?

Psychotropics

• Medications
  o Utilize same evidence-based treatments
  o Start low and go slow
  o Think about the side effect profile
  o Think about the medical comorbidities
  o Examples:
    • Cardiac Conduction Defects
    • Seizure Disorder

Disability

• Understand the individual’s disability and how that impacts the individual and their family/environment
Polling Question

Common biological factors to think about in our formulation for individuals with IDD include:

a) Gastrointestinal issues
b) Dental pain
c) Medications
d) Sleep
e) All of the above

Conclusion: Biological Factors

• Physical Health
• Genetics
• Prenatal Environment
• Medications
Questions

?

Vignette

• John is a 13 y.o. male with autism, ADHD, generalized anxiety disorder and mild intellectual disability. John communicates using fluent conversational speech. He loves playing video games and he is very good with technology. He has a close relationship to his mother, Janet. Janet is a single mother and she loves John very much. At his baseline, John is typically happy and enjoys spending time with his mother.

• John struggles with a long history of physical aggression that has recently increased dramatically in frequency and intensity. The aggression occurs at both home and school. John’s mother notes feeling overwhelmed caring for John as she works full time as a secretary and is often called to pick John up from school due to his challenging behaviors. John overall seems more moody and irritable.

• John last saw his PCP about 9 months ago when he was having irregular bowel movements and he was treated for constipation. John has a restricted diet, he is a very picky eater and is overweight. John has not seen a dentist in years. He is also a poor and restless sleeper. He sees a psychiatric nurse practitioner every three months and is treated with multiple psychotropic medications with little benefit noted. John’s medications include: Quetiapine, Citalopram, Concerta, and Busprione.

• John’s parents separated when he was 6 years old. His father struggled with depression and alcohol abuse. There was domestic violence in the home from John’s birth until he was 6 years old. John has not seen his father since their separation.
Vignette Questions

- Discuss the biological factors in the case example.
- Discuss the psychosocial factors in the case example.
- What else would you want to know?

Psychological Factors in a Biopsychosocial Formulation

Jill Hinton, PhD
CSS Clinical Director

Common Psychological Vulnerabilities

- IDD/ASD diagnosis
- Exec functioning deficits
- Psychiatric diagnosis
- Trauma
- Decreased *cognitive reserve* /ability to cope with stress
**IDD Diagnosis**

Developmental Disability – onset before 22, results in substantial functional limitations, reflects the individual's need for assistance that is lifelong or extended duration that is individually planned and coordinated.

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<th>ASD</th>
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<tr>
<td>IQ</td>
<td>Scatter of skills</td>
</tr>
<tr>
<td>Adaptive functioning</td>
<td>Social communication differences</td>
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<tr>
<td>determines level of ID</td>
<td>Concrete thinking</td>
</tr>
<tr>
<td>Similar function across</td>
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<tr>
<td>cognitive, social, and</td>
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<td>adaptive areas</td>
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**Executive Functioning**

- Many studies have shown that people with a developmental disability of any cause have a deficit in executive functions
- Executive functioning is a set of mental processes that helps connect past experience with present action
- This ability allows us to adapt and perform in everyday life by recognizing the significance of unexpected situations and to make alternative plans when unusual events interfere with normal routines

**What Does EF Allow You To Do?**

- Start
- Stop
- **Change/shift**
- **Hold – working memory**
- Modulate
- Organize
- Orchestrate
- Monitor – self-regulate, inhibit

*(K. Benedict)*
What Do Executive Function Deficits Look Like?

Difficulty with...

- **Impulse control** – may blurt out inappropriate things, take risks, strike out at others
- **Emotional control** – may overreact, difficulty dealing with criticism, difficulty handling when things go wrong
- **Flexible thinking** – difficulty being adaptable, problem-solving, seeing a different perspective
- **Working memory** – short term memory issues, learning from the past, understanding cause & effect (consequences)

Jill Hinton, Ph.D.

Executive Function Disorder

- The greater the EF impairments, the more external structure and supports the person needs
- An individual can have very minimal cognitive deficits but have deficits in EF and not function well at all
- This can lead to significant issues – unrealistic expectations, misdiagnosis, etc.
Psychiatric Diagnosis

• Individuals with IDD can exhibit the full range of psychiatric disorders experienced by people without disabilities.
• Most common disorders:
  o trauma, depression and anxiety
• Bipolar disorder and schizophrenia are far less common
  o Very severe when they occur

"Primary" diagnosis is an artificial construct…

IDD and Mental Illness

• 30-40% of all persons with IDD have a psychiatric disorder compared to 27% of the general population.
• 10-20% have challenging behavior (self-injury, aggression, destructive behavior) severe enough to impair daily life.

Yet, they are under-diagnosed, not treated, or inappropriately diagnosed.

Symptoms of mental illness often present differently in individuals with intellectual disabilities.

Determining accurate psychiatric diagnosis becomes especially difficult as the level of intellectual functioning declines.
Diagnostic Considerations

- Cognitive abilities limit understanding of questions and answers (intellectual distortion)
- Difficulty with receptive and expressive language
- Deficits in ability to articulate abstract concepts such as depressed moods
- People with IDD may often feel pressured to say ‘yes’ due to power imbalances
- Atypical symptoms/presentation can lead to incorrect diagnosis
  Ex: trauma → psychosis, anxiety → non-compliance

Polling Question

True or False:
Diagnosis is the same as formulation

Trauma in IDD

- Estimated 90% of individuals with IDD have experienced trauma
- Individuals with disabilities are 4-10 times more likely to be sexually abused
- More likely to experience negative life events, such as serious illness or injury
  - “Little ts” – trauma can include illness, hospitalization, separation from family, domestic violence, neglect, frequent changes in caregivers
- Life losses may result in complicated or traumatic grief
- Traumatic exposure disrupts the development of self-regulatory processes, leading to
  - Chronic emotional dysregulation, destructive behavior towards self and others, dissociative problems, somatization and distortions in concepts of self and others
BioPsychoSocial Factors That Contribute to Risk of Trauma

• Social
  o Trained to be "compliant"
  o Dependent on caregivers for longer; often have multiple caregivers
  o Isolated from resources to report
  o Often not provided with general sex education
  o Feelings of isolation and withdrawal which may make them more vulnerable to manipulation & exploitation

• Biological:
  o Sometimes impaired mobility
  o Medical treatments/health care needs, physically dependent on others

• Psychological/Cognitive:
  o Sometimes impaired in ability to communicate
  o Cognitive and processing delays that interfere with understanding what is happening in abusive situations
  o IQ influences the likelihood both of exposure to traumatic events and the development of PTSD if exposed – the lower the IQ the higher the risk

Not everyone who experiences trauma develops PTSD
  o But people have long lasting effects due to trauma

"We need to presume the clients we serve have a history of traumatic stress and exercise 'universal precautions' by creating systems of care that are trauma-informed."

(Hodas, 2005)
Cognitive Reserve

- The brain's ability to improvise and find alternate ways of getting a job done
- Cognitive reserve can also help you function better for longer if you're exposed to unexpected life events and stress
- People with IDD have less cognitive reserve

Image source: [https://brickelandassociates.com/adhd-and-trauma/](https://brickelandassociates.com/adhd-and-trauma/)
Polling Question

Which of the following could be considered a psychological factor?

a) Trauma  
b) Anxiety  
c) Executive functioning deficits  
d) All of the above

Recap: Consider Psychological Vulnerabilities

• IDD/ASD diagnosis  
• Exec functioning deficits  
• Psychiatric diagnosis  
• Trauma  
• Decreased in "cognitive reserve"/ability to cope with stress

Social Factors in a Biopsychosocial Formulation

Karen Weigle, PhD  
CSS Associate Director
Where to Start?

• Collateral data is key!!
• Understand the individual and their baseline functioning
• Understand the change from their baseline functioning

Look Beyond The Challenging Behavior!

• Important to look deeper than the behavioral problem:
  - Think biopsychosocial
    - Don’t forget social factors!
    - Cause or contribute to the individual’s presentation

Biopsychosocial

• Now we have addressed biological concerns and considered the impact of psychological factors, we must consider social factors that impact people
• Most often in the IDD field, professionals jump to social factors that contribute to behavioral presentation before ensuring biological and psychological concerns are considered, addressed, and ameliorated
• Social factors are equally important and almost always contribute to all our challenges and our wellness
Disability
Understand the individual’s disability and how that impacts the individual and their family/environment

Karen Weigle, Ph.D.

Cultural Identities
Investigate each how each person and family identifies, and how that impacts their identity and social world view
- Disability
- Religion
- Race
- National origin
- Language
- Class
- Gender identity
- Others?
  - How do ableism and other isms impact the person and family?

Karen Weigle, Ph.D.

Social Factors
- Isolation/loss of relationships
- Lack of natural supports/satisfying reciprocal relationships
- Micro inequities/traumatic experiences
- Boredom
- Lack of giving/contributing/feeling fulfilled
- History of rejection and marginalization

Karen Weigle, Ph.D.
The Biopsychosocial Model of Health

What Can We Do?
Continually promote...

Polling Question
True or False:
The biopsychosocial model is primarily important for assessment
**Vignette**

- Julie is a 32 year old female with mild intellectual disorder. She has a history of several psychiatric diagnosis including Anxiety, Borderline Personality Disorder, Depression, Oppositional Defiant Disorder, Attention Deficit Hyperactivity Disorder. These multiple psychiatric diagnoses are the result of her frequent emergency room and hospital visits. She also has been diagnosed with GERD and Irritable Bowel Syndrome.

- Julie is a strong, capable, loving, and helpful woman who currently lives in a group home with 3 other women. She maintains a close relationship with her adoptive parents. She loves being helpful to others and feeling like she has a purpose in her environment. She is a talented artist and does beautiful pencil sketches of people in her life.

- Julie struggles with mood dysregulation and has episodes of self-injury and verbal aggression. When she is most distressed, she will leave her home abruptly and there are concerns about her safety in the community. She often reports pain and other medical concerns which result in frequent visits to the ED.

- Julie was adopted when she was 3 years old from another country where she had lived in an orphanage since infancy. Julie experienced a significant trauma later in her life when she was raped on the school bus.

**Questions**

- Discuss the psychological factors in the case example.

- Identify the biological and social factors that interact with the psychological factors in the case example.

- How do the identified biopsychosocial factors lead to more accurate diagnosis and case conceptualization?
Connecting BPS to PERMA

• Intake and assessment
• Ecomap
• Recent Stressors Questionnaire
• Aberrant Behavior Checklist
• Observation
• Strength spotting

BPS Assessment and Formulation

Strategies to Address BPS Vulnerabilities

• Positive Emotion – increase pleasure and enjoyment
• Engagement – using strengths, flow
• Relationships – increase natural supports
• Meaning – connections
• Accomplishments – use of strengths, skills, interest; celebrate goals met

PERMA

Citations


Tomorrow's Agenda

Cross-Systems Crisis Prevention and Intervention
Joan B. Beasley, PhD, CSS Director, and David O’Neal, MS

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