

A Lifespan Developmental Approach to Understanding Substance Abuse

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Learning Objectives

- Understand the limitations of conceptualizing substance use disorders from a static rather than dynamic developmental perspective
- Understand how a developmental lifespan approach leads to a more comprehensive understanding of the development and maintenance of substance use disorders
- Learn about specific pathways to substance misuse
- Learn about the implications of taking a lifespan developmental approach to the assessment and treatment of substance use disorders

Traditional Approaches

- Substance misuse and addiction have traditionally been viewed by examining individual and contextual factors within, rather than across specific periods - for example focusing on substance misuse among teens or among the elderly
- Attention has also often focused on unitary risk factors, such as genetics or learned maladaptive coping responses, rather than the complex interplay of factors over time

Lifespan Developmental Approach

- This approach focuses on the changes that occur within the individual from before birth through the end of life
- Developmental approaches also take into account the interplay between genetics, environmental influences, learning, neural development, and behavior

Prenatal Risk Factors

- Prenatal exposure to drugs due to maternal substance abuse
- Neonatal Abstinence Syndrome
- While drug-exposed youth demonstrate cognitive and fine motor skills within normal ranges when compared to the total population, they consistently perform less well than a comparison sample of children known not to have been exposed to drugs in utero. These differences however are related not only to maternal substance use *but also to low birth weight and unstable parental care in infancy*

Early Childhood Risk Factors

- Prenatal exposure to substances can result in subtle neurobehavioral impairments in terms of arousal, the ability to focus and sustain attention, and the regulation of emotion
- These biological vulnerabilities interact with elements of the environment, such as inconsistent or poor maternal care and chaotic home environments
- These effects may interact and build on one another over time, serving to magnify the impact of in-utero drug exposure

Source: National Institute on Drug Abuse, or NIDA

Early Childhood, cont.

- For example, while a baby born to a mother using street heroin and one born to a mother participating in methadone treatment are both born having been exposed to opioids, the lives they lead immediately following birth are likely quite different one from another (NPR interview citing Dr. Joshua Sharfstein of the Johns Hopkins Bloomberg School of Public Health)
- It is this interplay of genetic, biological, familial, social, and contextual factors that over the course of development influence the nature, extent, and direction of the complex relationships between risk and protective factors and later outcomes

Early Childhood, cont.

Youth who had just a few changes in their caregivers early on, or had mothers who used the least number of different drugs during pregnancy demonstrated the best cognitive performance.

On the contrary, children born to mothers who used multiple drugs during pregnancy perform worse than their peers on a variety of cognitive functions.

Therefore, vulnerability isn't just a function of the mother's drug use during pregnancy but also to birthweight and early, unstable parental care.

(Nygaard et al., 2017)

Early Childhood, cont.

- The complex interplay of biological, behavioral, social, and contextual factors (including the experience of trauma) during early developmental years sets the stage for later-life issues with substance use as well as mental health and physical health problems
- From a lifespan developmental perspective, these pathways can lead to later substance misuse and other life challenges

Pathways

- Early identification of risk factors, vulnerabilities, and behaviors that tend to cluster together help in the identification of specific developmental pathways
- To the extent that these developmental pathways can be identified and observed:
 - Prevention, detection, and early intervention efforts can be directed towards young people and their families during the middle school and adolescent years
 - Protective factors can be put into place to minimize risk for later substance misuse

Pathways

- Intervening in these pathways early on may reduce the need for or lessen the intensity of interventions required if the substance misuse is not addressed until late teenage years or into adulthood
- Addressing the presence of risk factors as well as the absence of protective factors is necessary not only to provide a more complete understanding of how substance misuse patterns develop over the lifespan but also inform health promotion, prevention, and intervention efforts

Pathways

Examining and conceptualizing substance use disorders from a developmental lifespan perspective informs a more holistic approach that includes the individual, relationship, community, and societal levels in line with the socioecological model

Bronfenbrenner, U. (1977)

The socio ecological model

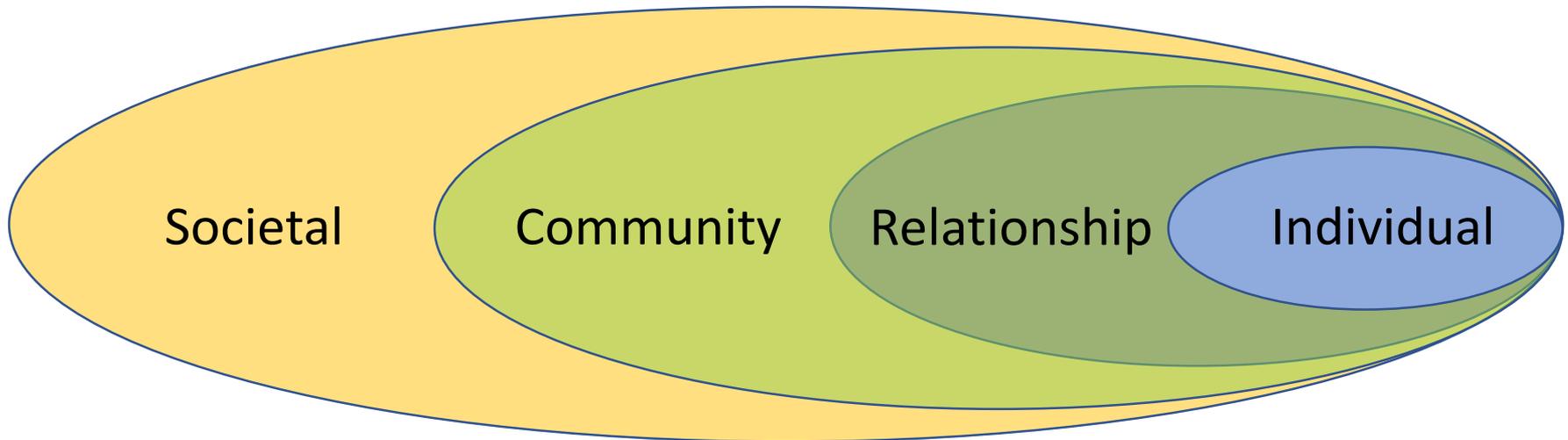


Diagram adapted from:

<https://www.cdc.gov/violenceprevention/publichealthissue/social-ecologicalmodel.html>

Individual Level

- This level addresses the biological, personality, and personal history that impact the likelihood that the individual will develop a substance use disorder
- A wide variety of prevention and intervention strategies are applied at this level, from awareness, education, and prevention strategies that promote knowledge, attitudes, intentions, and behaviors around substance use
- The identification of specific risk and protective factors is crucial at this level

Relationship Level

- This level examines and accounts for those close relationships that influence individual choices and behaviors, and generally includes family members and close peers within one's social circle
- Prevention and Intervention strategies at this level include parenting or family-focused strategies, as well as mentoring and peer programs that address substance use but also bolster protective factors and skills, such as promoting healthy relationships and improving problem-solving and assertiveness

Community Level

- This level addresses larger contexts, such as schools, neighborhoods, workplaces, and “third places” such as places of worship, coffee houses, bars/pubs, clubs, and parks/athletic facilities
- At this level we identify and address the aspects of these settings that either increase risk or insulate individuals from risk, addressing issues such as context-dependent normative behaviors, social isolation, disparate opportunities, and the policies and processes in place in these settings

Societal Level

- This level focuses on the large scale and very broad societal factors and influences that support and encourage or alternatively condemn and discourage substance misuse
- These include historical attitudes, cultural norms, current and prior policies and practices, and laws as well as policies and norms regarding health, economics, education, and other practices and perceptions at the societal level
- These factors differ based on factors such as society of origin

Benefits of a Lifespan Model

“A developmental perspective holds the key to changes in understanding, practice and policy that must ensure better protection of our young from the onslaughts of gene-environment interactions that can lead to poor decision making and substance abuse.”

(Leyton, M., & Stewart, S. (Eds.), 2014, p. 7)

Two Developmental Pathways

- Substance use disorders are linked to a wide variety of developmental issues that arise in childhood and adolescence
- These issues are shaped by a series of interwoven genetic, biological, behavioral, psychological, and sociocultural factors

Two Developmental Pathways

- Genetic factors are thought to explain between 40% and 60% of a person's vulnerability to substance misuse
- Brain development in early life, specifically around the processing of reward cues and fear processing, impact later behaviors that involve these areas, such as substance abuse
- The role of early environment and experiences on brain functioning, specifically trauma and exposure to stressors, greatly influences later behavior and choices

Two Developmental Pathways

Pathway 1: Characterized by an enduring tendency toward impulsive risk-taking and aggression (externalizing behaviors): more responsive to activation of the brain's reward/pleasure system; the use of drugs to feel good

Pathway 2: Characterized by anxiety or depression (internalizing behaviors): more responsive to activation of an overly responsive fear-anxiety system; the use of drugs to feel calm

Both pathways also lead to a wide range of mental health issues, setting the stage for the development of cooccurring mental health/substance use disorders

Pathway 1: Externalizers

- Disruptive Behavior Disorders (DBDs) such as conduct disorder, ADHD, Intermittent Explosive Disorder, and Oppositional Defiant Disorder:
 - Compared to children without these conditions, individuals with DBDs have:
 - Twice the risk of abusing tobacco
 - Three times the risk of abusing alcohol
 - Five times the risk of abusing drugs
 - Seventy-five percent of adolescents with a DBD abuse substances as adults
 - Half of adults with substance use disorders had one or more DBDs during their youth

Pathway 1: Externalizers

- Factors that predict the development of DBDs:
 - Genetics
 - Chronic early maltreatment
 - Parents who abuse drugs and/or alcohol
 - Parents who exhibit antisocial behavior
 - Early age of onset of substance misuse

Pathway 2: Internalizers

- Factors associated with Internalizing issues:
 - Behavioral inhibition in infancy and early childhood, as evidenced by withdrawal, fear of unfamiliar situations and events, general anxiety, cortical over-arousal
 - Mood disorders such as depression, particularly in adolescence and more prevalent among females than males
 - Typically mood and anxiety issues precede the development of substance abuse disorders, suggesting that substance misuse is an attempt to self-medicate

Pathway 2: Internalizers

- There appears to be an overlapping mixture of factors that predispose persons to both substance use disorders as well as mood and anxiety disorders
 - Genetic factors
 - Neurobiological impacts on personality development
 - Early experiences of trauma, such as abuse and/or neglect
- Substance misuse exacerbates mood and anxiety disorders, which only perpetuates the link between internalizing disorders and substance misuse

A Lifespan Conceptualization of Intervention and Prevention

- The risk factors that influence these two pathways are at least partly dependent on stage of development
- Each stage of development therefore presents unique challenges as well as opportunities
- Incorporating developmentally appropriate and tailored strategies also involves a multidisciplinary approach, working to address substance misuse across different social contexts and settings

Early Childhood Strategies

Reduce exposure to parental substance abuse and psychopathology by improving parenting abilities of at-risk parents and caregivers

- Helping parents improve their parenting abilities with infants and toddlers
- Increase availability and utilization of prevention and intervention programs targeted towards first-time and younger parents

Doing so may improve parent-child attachment, reducing behavioral and emotional dysregulation

School-age Strategies

Focus on early identification of suboptimal parenting practices, exposure to stressful conditions and events, as well as genetic predispositions

Provide multilevel preventative strategies at the levels of the individual, family, and community (e.g., schools, community centers) to target specific risk factors, increase self-efficacy, and foster appropriate and effective social adaptation

Adolescent Strategies

Ensure that providers are able to differentiate normal, expected features of adolescence from problematic and potentially harmful behaviors

- Identify and target truly problematic behaviors
- Apply personalized, multi-level prevention and intervention strategies at the individual, family, and community levels

These will be specific to each of the two identified pathways

EBPs at each developmental phase – Early Childhood

Strengthening Families Program – for high risk and general population families

- Effective in many different racial and ethnic groups, from early childhood through teens
- Facilitator-led and family self-study (DVD and Internet-based) versions are available
- <https://www.strengtheningfamiliesprogram.org/>

EBPs at each developmental phase – Early Childhood

Celebrating Families Program (CPS) – for families in which one or both spouses have a serious substance use disorder

- Consists of a 16-week, facilitator-led curriculum for 6 to 15 families
- On SAMSHA's National Registry of Effective Programs and Practices (NREPP) since 2008
- <http://www.celebratingfamilies.net/>

EBPs at each developmental phase – Early Childhood

Family Dependency Treatment Court (FDTC)

- Research studies (summarized by Marlowe and Carey, 2012) have found that FDTCs:
 - Increase treatment retention
 - Increase treatment completion
 - Increase rates of family reunification
 - Are cost-effective
 - Effectiveness extends to higher risk, more complex cases

EBPs at each developmental phase – through Adolescence

Strengthening Families, Celebrating Families, Family Dependency Treatment Court (FDTC), and reference:

- SAMSHA's NREPP: <https://www.samhsa.gov/ebp-resource-center> - was “frozen” in January 2018, no new funding since then. Here's an archived list of prevention programs for youth ages 6 – 17, posted by the State of Colorado in 2015:

<https://www.cde.state.co.us/healthandwellness/nrepp-substance-abuse-programs-2015-pdf>

EBPs at each developmental phase – Adolescent Treatment

- **Multisystemic Therapy (MST)**
- **Multidimensional Family Therapy (MDFT)**
- **Brief Strategic Family Therapy (BSFT)**
- **Functional Family Therapy (FFT)**
- **Adolescent Community Reinforcement Approach (A-CRA)**

All of these are systems-level, rather than individual-level interventions – likely a big part of the reason for their effectiveness

EBPs at each developmental phase – Adulthood

- A wide variety of treatment programs, both behavioral and psychopharmacological, have been found effective among adults
- Programs differ based on substance of abuse
- National Institute on Drug Abuse clearinghouse:

<https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/evidence-based-approaches-to-drug-addiction-treatment>

EBPs at each developmental phase – Adulthood

Behavioral treatment approaches:

- Cognitive-Behavioral Therapy (Alcohol, Marijuana, Cocaine, Methamphetamine, Nicotine)
- Contingency Management Interventions/Motivational Incentives (Alcohol, Stimulants, Opioids, Marijuana, Nicotine)
- Community Reinforcement Approach Plus Vouchers (Alcohol, Cocaine, Opioids)
- Motivational Enhancement Therapy (Alcohol, Marijuana, Nicotine)
- The Matrix Model (Stimulants)
- 12-Step Facilitation Therapy (Alcohol, Stimulants, Opiates)
- Family Behavior Therapy

EBPs at each developmental phase – Adulthood

Pharmacological treatment approaches:

- Opioids: Medication Assisted Treatment (MAT)
 - Methadone: agonist
 - Buprenorphine: partial agonist
 - Naltrexone: antagonist
- Alcohol:
 - Naltrexone: antagonist
 - Acamprosate
 - Disulfiram (Antabuse)
 - Topiramate

Adult Drug Courts – preaching to the choir here!

EBPs at each developmental phase – Older Adulthood

- Substance use and abuse among older adults has been under-identified for decades
- Substance use disorder (SUD) rates have remained high among Baby Boomers as they age, with the first round of Baby Boomers turning 65 in 2011
- Therefore, the prevalence and raw numbers of older adults needing SUD treatment will continue to grow significantly
 - The number of persons older than 50 years with SUDs is projected to double from just under 3 million in 2006 to just under 6 million in 2020

(Kuerbis et al., 2014)

EBPs at each developmental phase – Older Adulthood

- Older adults are less likely than others to be screened for the presence of SUDs
- Older adults respond to intervention efforts as well and in some cases better than younger persons
- Only about 18% of substance abuse treatment services have been specifically designed for older adults; as a group they are also less likely to utilize mental health services than any other age group
- Brief interventions (e.g., MI), MAT for alcohol abuse, and community-based case management are effective
- Supportive Therapy Models (STM) and Cognitive Behavioral Therapy (CBT) have demonstrated effectiveness among older adults with SUDs

source: Kuerbis et al., 2014

Implications

Substance use disorders don't just happen – they arise as the result of a complex interplay of genetic, developmental, experiential factors at the individual, familial, community, and societal levels

Implications

Given the complexity of the origins of substance use disorders and the fact that they arise within a series of overlapping contexts, taking a developmental lifespan developmental approach provides “the big picture” – prompting a more comprehensive and holistic public health approach to addressing these complex disorders

Implications

A public health approach involves a prevention focus with three components:

- Primary prevention: Preventing the disease or injury from occurring in the first place
- Secondary prevention: Reduce the impact of the disease or injury
- Tertiary prevention: Reduce the impact of an ongoing illness or injury with the goal being to reduce the severity and chronicity of its effects

Implications

Taking a developmental lifespan approach fits right into a public health prevention focus, as it allows us to conceptualize the development, prevention, and treatment of substance use disorders across the lifespan.

This promotes a holistic, comprehensive, and multigenerational focus that can and should shape how we approach substance use disorders.

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