



ZOOMERS IN MIND: ENGAGING THE YOUTH MENTAL HEALTH CRISIS

Defining the crisis, its antecedents, and future
directions

Aaron Krasner MD Monday May 22, 2023



ADOLESCENCE

- **Hypothesis:** Rapid brain maturation is fertile ground for variability and error.
 - “moving parts get broken” (Giedd 2008)
- .. A symphony **of developmentally sensitive neurological changes..**
 - Neural pruning
 - Neural connectivity
 - Neurochemistry
 - Peak onset for any mental health disorder – age 14
- Experimentation with **drugs and alcohol** (e.g. cannabis exposure and psychosis for high novelty seeking boys with low harm avoidance)
- Synchronous with **endocrine changes** (e.g. only after Tanner Stage III females exceed males in depression rates)

1. Phases of adolescence:

1. early (11-14)
2. middle (15-17)
3. late (18 -)

2. Risk and Resilience



PHYSICAL

hormonal changes and development



COGNITIVE

changes in the way the brain functions



EMOTIONAL

how adolescents process emotions and stress



SOCIAL

changes in familial, social, and romantic relationships



MORALS AND VALUES

how adolescents regard their place in the world

COVID'S IMPACT ON TEEN'S BRAINS



....It appears, therefore, that the pandemic not only has adversely affected mental health of adolescents, but also has accelerated their brain maturation.

(Gottlib et al)

♦ Towards a Unified Analysis of Brain ♦

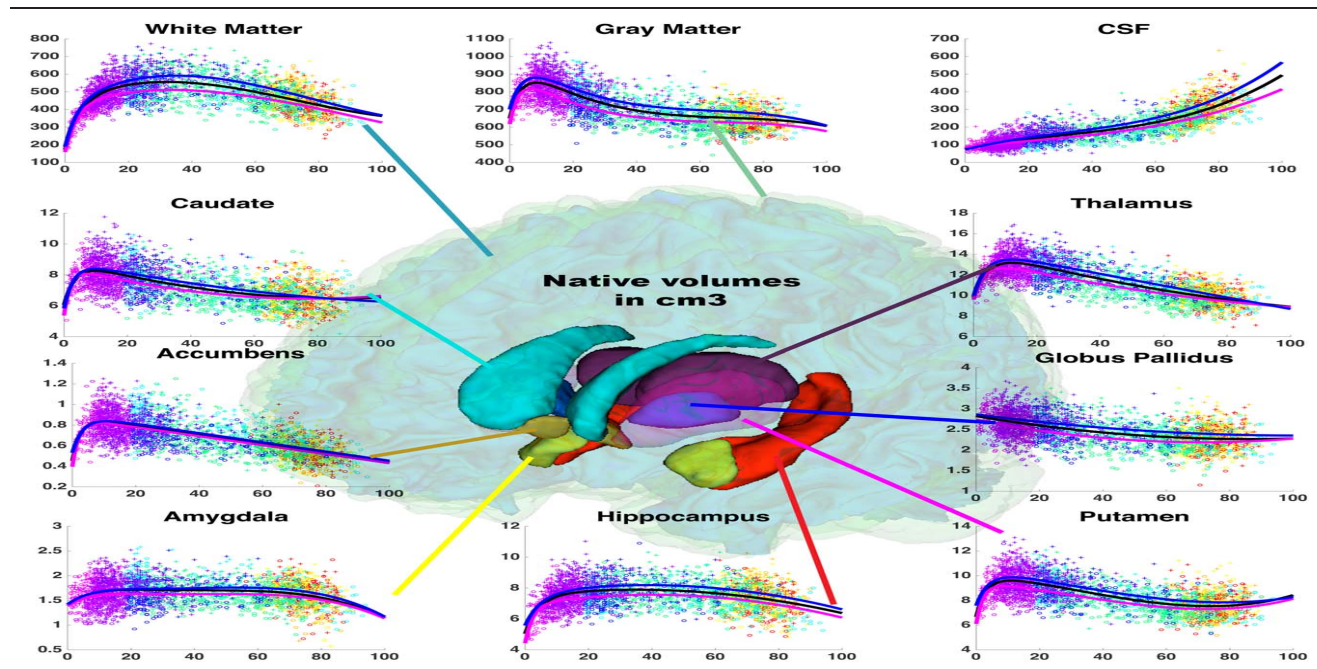


Figure 2. Volume trajectories based on absolute volume in cm^3 for brain tissues and subcortical structures across the entire lifespan. These volume trajectories are estimated according to the age on 2,944 subjects from 9 months to 94 y. General model is in black, female model is in magenta and male model is in blue. Dots color represents the different datasets used in this study (see Fig. 1 for dataset color legend). [Color figure can be viewed at wileyonlinelibrary.com]

- **Common** - one in four children/teens
- **Persistent** - persistent into adulthood
- **Costly** – psychiatric illness, depression in particular
- **Deadly** - Psychopathology is associated with risk for despair deaths
- **Increasing** – even when controlling for broadened phenotypes, greater societal recognition of mental illness



PRE-PANDEMIC TRENDS – THE ZOOMERS

ZOOMERS – AN AT-RISK GENERATION

Zoomers grew up with the following:

9/11

Katrina

Afghanistan/Gulf war

Intensification of domestic terrorism

White nationalism and escalations in hate crimes

Financial crisis

Opioid epidemic

Mass shootings

Climate change

Police brutality and civil unrest

Social media and Commodification of humans

Economic and health disparities

(Fight, Della Volpe and iGen, Twenge)



- As part of his call to arms, Dr. Murthy offered a pithy summary of significant pre-pandemic shifts in adolescent psychopathology
 - From 2009 to 2019 adolescent depression increased by 40%
 - Rates of suicidal ideation increased by 36%
 - Those that have made a suicide plan increased by 44%.
 - Behavioral health care utilization up by 28%.
 - Between 2007 and 2018, suicide rates among youth ages 10-24 in the US increased by 57%
- there were tragically more than 6,600 deaths by suicide among the 10-24 age group in 2020



The Percentage of High School Students Who: ^a	2011 Total	2013 Total	2015 Total	2017 Total	2019 Total	2021 Total	Trend
Experienced persistent feelings of sadness or hopelessness	28	30	30	31	37	42	
Experienced poor mental health ^b	–	–	–	–	–	29	–
Seriously considered attempting suicide	16	17	18	17	19	22	
Made a suicide plan	13	14	15	14	16	18	
Attempted suicide	8	8	9	7	9	10	
Were injured in a suicide attempt that had to be treated by a doctor or nurse	2	3	3	2	3	3	

State of the art

Epidemiology of mental disorders in children and adolescents

*Kathleen Ries Merikangas, PhD; Erin F. Nakamura, BA;
Ronald C. Kessler, PhD*

A REMINDER ABOUT PSYCHIATRIC EPIDEMIOLOGY

- Goal of epidemiologic studies is to identify the *etiology* of a disease
- The two major estimates of rates in epidemiology are prevalence (lifetime, 12-month, point) and incidence.
- Case control studies compare the association between a particular risk factor or disease correlate and the presence or absence of a given disease, after controlling for relevant confounding variables

TRENDS IN MOOD DISORDER INDICATORS

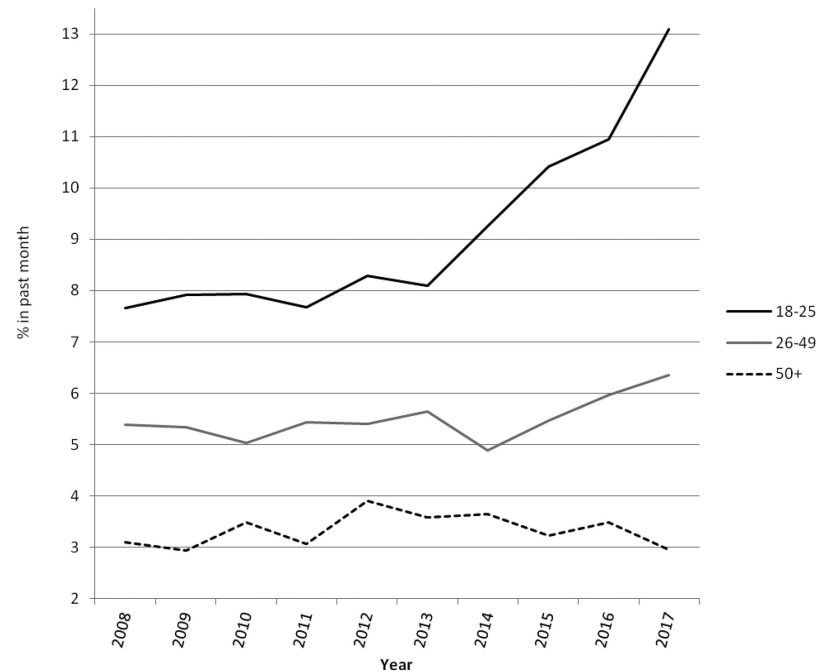


Figure 1. Percent with serious psychological distress in the last month by age group, 2008–2017.

- **Females** (at a Tanner stage III) acquire depression risk factors much faster than boys and are more often diagnosed and treated for depression, self harm, and suicidal ideation.
- **LGBTQI+ BIPOC** (Black, Indigenous, and People of Color) endure higher rates of adversity and relatedly, psychiatric disorders, typically with less care and poorer outcomes
- **Parents** were already burning out relating to adversity with their children.

YOUNG FEMALE ADOLESCENTS AND SOCIAL MEDIA

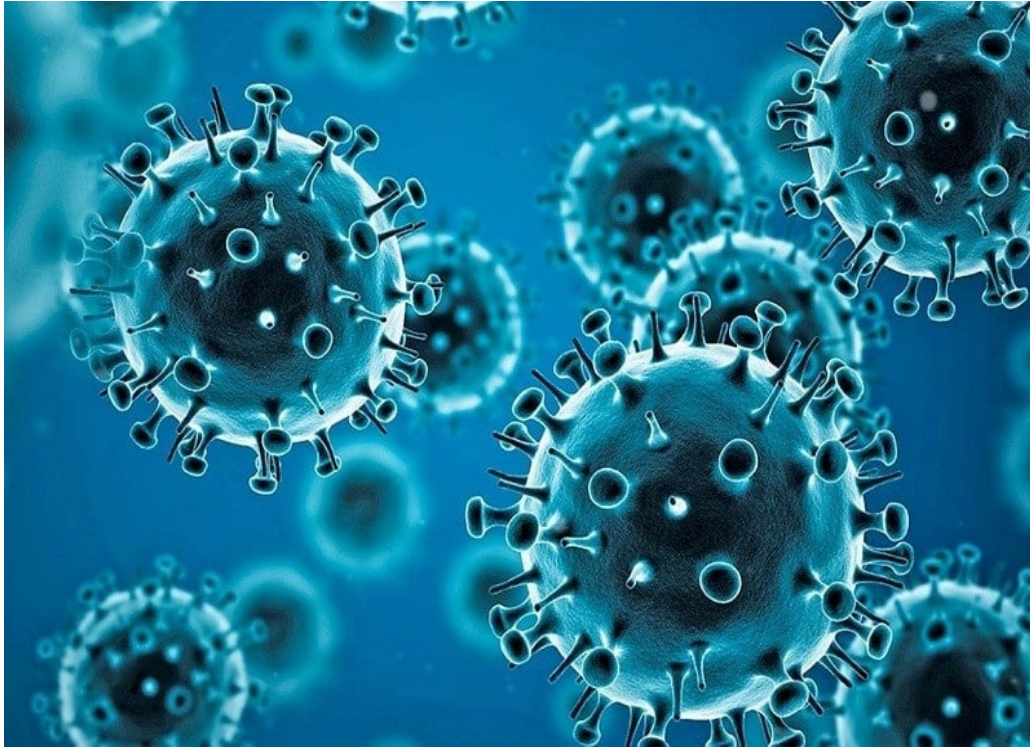
- #Sleepyteens – social media use at night associated with poor sleep quality, anxiety, depression, and low self esteem among girls
- Nighttime-specific social media use predicted poorer sleep quality after controlling for anxiety, depression and self-esteem.
- 86% of adolescents sleep with their phone in the bedroom often under their pillow or in their hand





COVID STRIKES

COVID 19 – A UNIVERSAL STRESSOR



<https://youtu.be/9qRBHg9n8B4>

- 90% (1.5 billion young people) students worldwide lost in-person education.
- ... families have experienced enormous stress due to seclusion within households, social isolation, concern about the health of family and friends, disruptions to school and child-care, and the need to make new health-related decisions in a context of uncertainty.
- ... such stressors have the potential to disrupt basic processes within the family by overloading the lives of caregivers, who are faced with the challenges of both providing for and taking care of the family

- In most studies, outcome variables across time include
 - psychiatric diagnoses
 - psychological distress
 - self-harm
 - subjective well-being and loneliness.
- Pierce and colleagues (2020) reported increases in prevalence of psychological distress from **18.9% in 2018 to 27.3% in late April 2020**
- 44,775 adults in the United Kingdom between late March and late April 2020
 - 18% of respondents reported suicidal ideation about or self-harm (Iob, Steptoe, et al., 2020)
 - 5.4% of the adult population 16 years and older from England, Scotland, and Wales had reported suicidal thoughts in the past year). McManus et al. (2016)

RISK FACTORS CONTRIBUTING TO YOUTH MENTAL HEALTH SYMPTOMS DURING THE PANDEMIC

Note: Not a comprehensive list of risk factors

Having **mental health challenges** before the pandemic^{61, 64}

Living in an **urban area** or an **area with more severe COVID-19 outbreaks**⁶⁵

Having parents or caregivers who were **frontline workers**⁶⁶

Having parents or caregivers at elevated risk of **burnout** (for example, due to parenting demands)^{67, 68}

Being **worried about COVID-19**⁶⁴

Experiencing **disruptions in routine**, such as not seeing friends or going to school in person^{69, 70, 71}

Experiencing more **adverse childhood experiences (ACEs)** such as abuse, neglect, community violence, and discrimination^{72, 73, 74}

Experiencing more **financial instability, food shortages, or housing instability**^{75, 76}

Experiencing **trauma**, such as losing a family member or caregiver to COVID-19⁷⁷

- Based on 49 studies the *prevalence of youth alcohol, cannabis, tobacco, and e-cigarette/vaping use has declined during the pandemic.*
- .. “In short, young people confined to their homes with parents had fewer opportunities for accessing and using substances.”
- Finally, in addition, youth living under the stress of parental substance use, family dysfunction, and domestic violence could predispose the later onset of substance use and violent behavior.

Layman, 2022



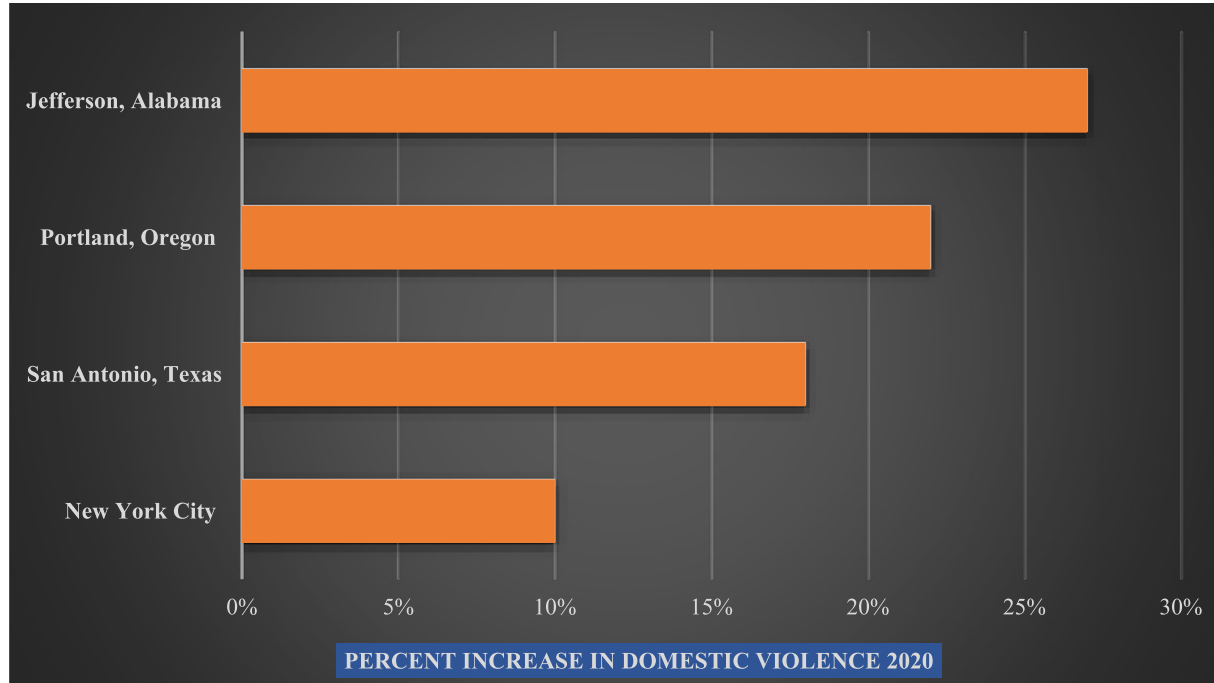
COVID AND ADULT PSYCHOPATHOLOGY

- 1 in 4 parents worsening mental health
- 1 in 7 parents reported worsening behavioral health for their children
- 1 in 10 families reporting worsening of both.
- From a PTSD study: Among adult respondents who met the clinical cutoff score for PTSD, nearly 86% had children who also met the clinical cutoff score.
- families with children reported high rates of parental stress (Griffith, [2020](#); Spinelli et al., [2020](#)), parenting-related exhaustion (Marchetti et al., [2020](#)) and higher than normal levels of depression and anxiety among parents and children (Wang et al., [2020](#)).

- Elevated levels of adverse mental health conditions, substance use, and suicidal ideation were reported by adults in the United States in June 2020
- The prevalence of symptoms of
 - **anxiety disorder** was approximately three times those reported in the second quarter of 2019 (25.5% versus 8.1%)
 - **depressive disorders** were approximately four times that reported in the second quarter of 2019 (24.3% versus 6.5%)
 - **Suicidal ideation** 10.7% (now) versus 4.3% (2019) respondents reported serious consideration of suicide in the previous 30 days
- Mental health conditions disproportionately affect specific populations, especially young adults, Hispanic persons, black persons, essential workers, unpaid caregivers for adults, and those receiving treatment for preexisting psychiatric conditions

IMPACT OF COVID 19 ON RELATIONSHIPS AND PARENTING

A



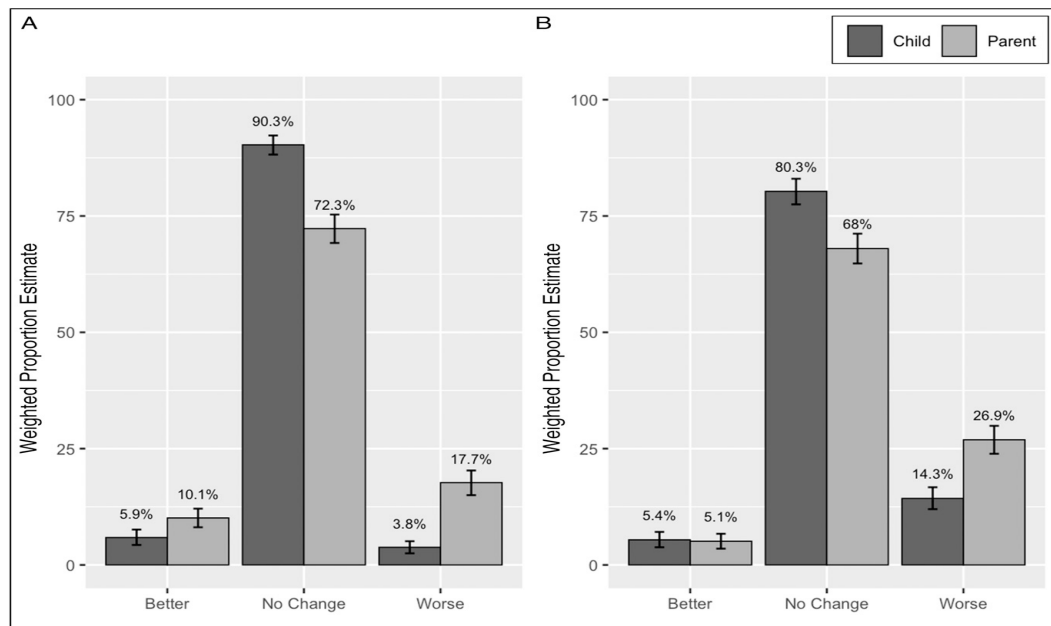


FIGURE 1
Parental physical and mental health and child physical and behavioral health changes since March 2020. A, Parental and child physical health changes. B, parental mental health and child behavioral health changes. Differences in health status between parents and children $P < .001$ by Rao-Scott corrected χ^2 test.

Note the divergences
Between child and parent
In the Worse category



TEEN X PARENT INTERACTION – THE FAMILY

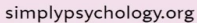




FIGURE 1

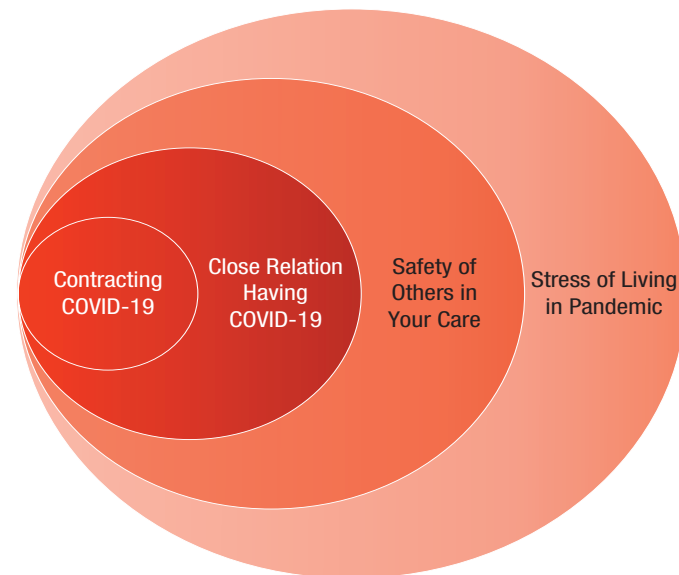
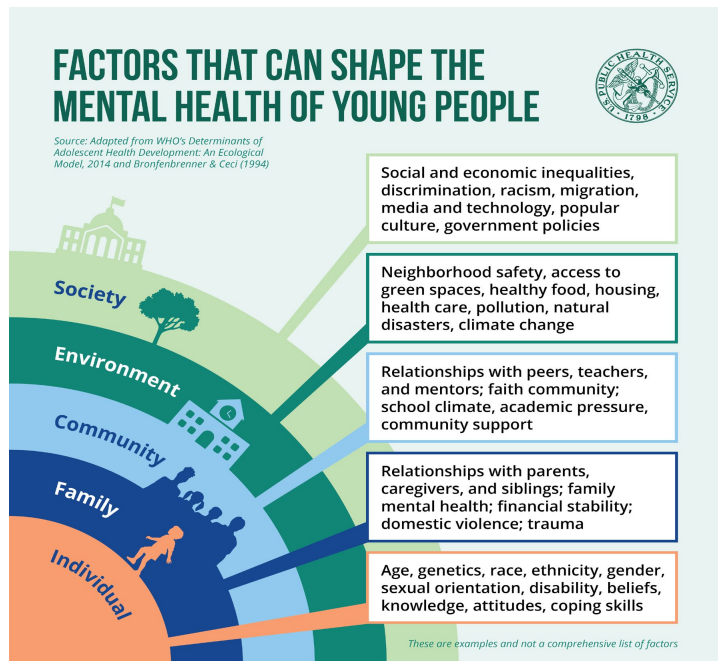


Fig. 1. Stressors imposed on individuals by the COVID-19 pandemic. Each circle represents a layer of potential stress during the COVID-19 pandemic that may accumulate to undermine mental health.

CIRCUMPLEX MODEL OF FAMILY FUNCTION

- Co-parental conflict mediated the impact of the stress of parenting/work demands and financial stress on family cohesion.
- At the within-family, dynamic process level, weekly spikes in health-related stress were associated with corresponding spikes in co-parental conflict, which, in turn, were associated with drops in family cohesion.
- The most basic hypothesis derived from the Circumplex Model is that *balanced types of couples and families will generally function more adequately than unbalanced types.*

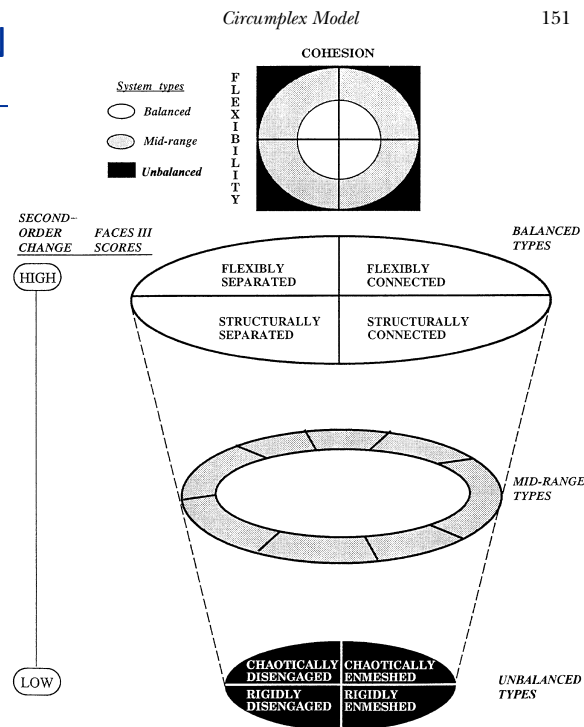


Figure 2 Three-dimensional family Circumplex Model

the Circumplex Model (Olson, 1991), an idea suggested by Lee (1988).

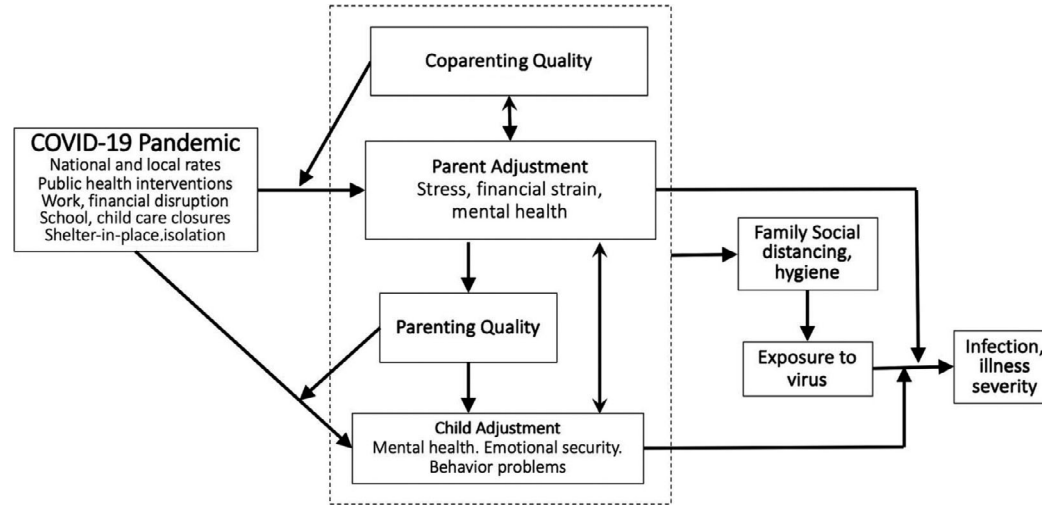
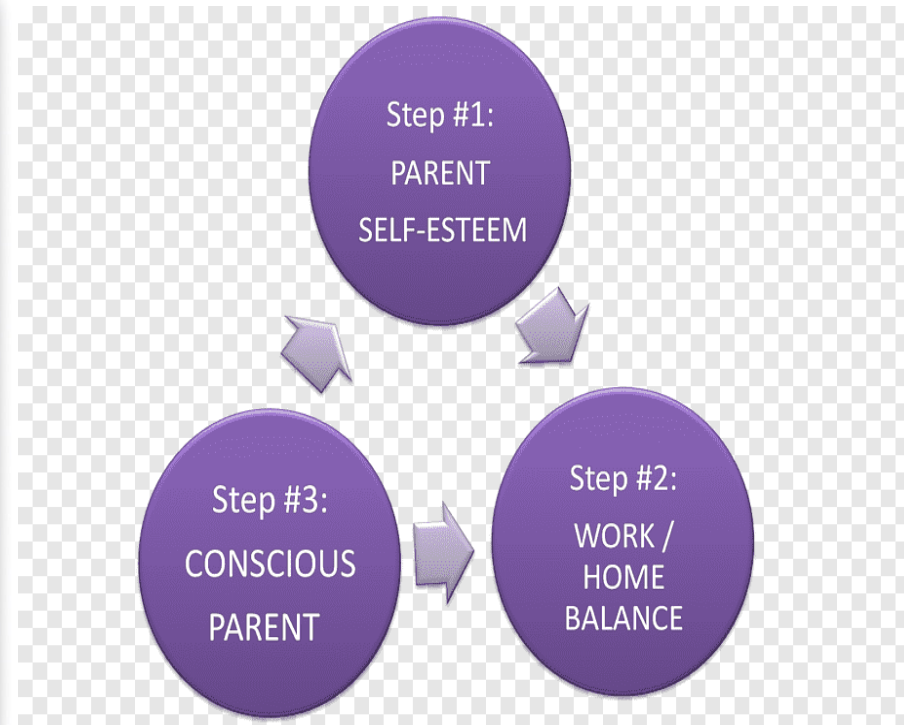


FIGURE 3. Illustration of Pathways from Pandemic Stressors to Family Functioning to Infection/Disease Severity

		Demandingness	
		High	Low
Responsiveness	High	Authoritative parenting	Permissive parenting
	Low	Authoritarian parenting	Rejecting-neglecting parenting



.. THE ROLE OF LONELINESS AND SUBJECTIVE WELL BEING

- Loneliness is a common, universal human experience (Djeste, 2023) involving feelings and cognitions that reflect emotionally from perceived deficiencies in social relationships
- Loneliness is associated with physical health problems, depression, social anxiety, low self-esteem, low social status, peer rejection, victimization, aggression and social withdrawal, and problems with attention.
- Subjective well being incorporates a balance of hedonic and eudemonic sources of happiness; when loneliness, familial rigidity and incoherence, and psychopathology preside, there is a problematic shift toward the pursuit of hedonic pleasure that paradoxically limits subjective well being.

- Simply put:
- Pre-pandemic trends + Pandemic stress (RISK) - Available treatment + family resilience (RESILIENCE) =
- Youth mental health crisis

Interactive Video Teleconference has helped with access to care.

- well suited for providing pharmacotherapy in accordance with evidence-based treatment protocols
- Ideal for rapid assessment of suicidality, depression, and anxiety
- Many clinicians continue to practice remotely with studies currently designed to test efficacy

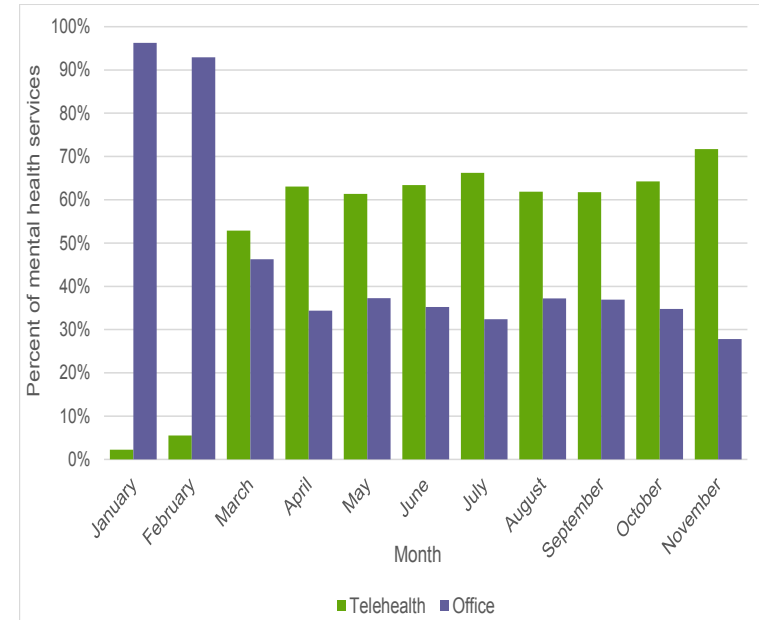


Figure 16. Telehealth versus the office as percent of mental health services, age group 19-22 years, January-November 2020



FUTURE DIRECTIONS

- The adolescent mental health care system was fragile, fragmented, and underfunded to begin with and it is worse now
 - Monitoring/Screening: variable, sometimes primary care sometimes teachers
 - Outpatient treatment: limited quality for assessment, limited availability
 - Inpatient treatment: shortened lengths of stay preclude meaningful work, limited collaboration between inpatient and outpatient teams
 - Residential treatment: expensive, not covered by insurance, limited evidence base
 - Treatment: psychosocial treatments divorced from medical treatments; over-reliance on psychopharmacology and polypharmacy relating to cost.
 - Treatment monitoring: limited implementation of measurement based care
 - Limited case management for complex cases
 - Limited dialogue between systems of care (eg, schools and hospitals) with parochial balkanization of social/emotional and cognitive dimensions of teen mental function
 - Limited access to family-based treatments or support for parents
 - Workforce shortages (~8400 CAPs to treat ~13 million cases)

- **Robust investments** in the clinical, research, and advocacy mission for teens and families are required to attenuate the proliferation of family and adolescent psychopathology
- **By focusing on systems** – models consistently demonstrate interrelationships that must be maintained; these are complex problems so the solutions will be, too
- **Adolescent psychiatrists specialize in systems** and that expertise matters
- **By training adult psychiatrists**, pediatric sub-specialists, and allied adolescent mental health care workers, adolescent psychiatrists can increase the numbers of competent clinicians capable of thinking systemically about manifestations of adolescent psychiatric impairment
- **Engagement** of self (mindfulness), colleagues (prosocial collaboration), patients (relational driven practice), and society (advocacy) portends greater cohesion for the system