

The background of the slide is a dense crowd of people, likely at a public event or transit station. Overlaid on this image is a network diagram consisting of numerous white circular nodes connected by thin white lines, representing social connections or data flow.

# The Psychology of Pandemics

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Member

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None identified

# Land Acknowledgement

This presentation takes place on on the  
unceded traditional territories of the  
x<sup>w</sup>məθk<sup>w</sup>əyəm (Musqueam),  
Sk̓w̓x̓w̓ú7mesh (Squamish), and səlilwətəł  
(Tseil-Waututh) Nations

# Importance of Psychological Factors

- Methods for managing pandemics
  - Communication from health authorities
  - Hygiene – e.g., handwashing, masks
  - Social distancing
  - Vaccination
- Psychological disorders
  - Worsening of preexisting problems
  - Triggered by pandemic
  - Exacerbated by lockdown

# Overview

- Psychological phenomena: Similarities across pandemics
- Polarization of attitudes, emotions, and behaviors
- Heterogeneity of responses: Role of personality traits
- Coping and the illusion of control
- Lockdown: Effects, alternatives
- Pandemics and mental health

# Psychological Phenomena: Similarities across Disease Outbreaks

# Pandemics and Other Noteworthy Outbreaks

- Influenza pandemics:
  - e.g., 1889, 1918, 1957, 1968, 2009
- Plague: Recurrent waves over 300+ years
- Cholera: 7 pandemics over 200 years
- HIV/AIDS
- COVID-19
- Others:
  - e.g., Zika, SARS-1, yellow fever, smallpox

## Characteristics of Disease Outbreaks that Trigger Widespread Public Alarm

- **Lethal:** Higher fatality than endemic diseases
- **Unfamiliar:** Emergent or re-emergent rather than endemic
- **Volatile:** Sudden or swift acting
- **Egalitarian:** Not limited to particular demographic groups
- **Uncertainties** about prevention, protection, and treatment
- **Newsworthy:** Widely reported in the media
- **Disgusting:** Revolting signs or symptoms
- **Stressful mitigation measures:** Socioeconomic impacts of lockdown, quarantine, etc.



## Similarities across Pandemics: Common Reactions

- Polarization of emotions, attitudes, behaviors
- New onset and newly worsened psychol. disorders
- Rise of altruism
- Rise of racism, xenophobia
- Non-adherence; masks, vaccinations, closures
- Sporadic protests, including violent protests
- Rumors
- Conspiracy theories
- Panic buying, superstitious coping
- Folk remedies, quack cures, and profiteering
- Fleeing

# Fleeing



# Pandemics and Protests

- Violent protests are commonly underestimated
- Cholera riots
  - Europe (1830s), Venezuela (1992), Haiti (2010)
- Smallpox vaccination riots
  - Montreal (1885), Rio de Janeiro (1904)
- Plague riots
  - India (1890s)
- COVID-19:
  - 3% increase in protests from 2019 to 2020; 94% peaceful
  - About two dozen violent protests (2020-2022)
  - e.g., Netherlands, Nov/2021: “worst riots in four decades”
- Commonly triggered by tightening or re-imposing restrictions
- Protests, including violent protests, tend to be bundled phenomena



An anti-lockdown protest in Wellington on August 29, during the second lockdown. Photo: Lynn Grieveson

# COVID-19 vs. Past Pandemics: Notable Differences



- Beliefs about the cause of disease
  - miasma vs germ theory
- Social media, 24/7 news cycle
- *Quantitatively* bigger “infodemic”
- Global, digital inter-connectedness
- Rapidly evolving views on COVID-19
  - e.g., whether masks are useful

# Polarization of Attitudes, Emotions, and Behaviors

## Pandemics Evoke Extremes

- Exacerbation of pre-existing societal tensions
  - The “fault lines” of society
- Over- vs under-responders re threat perception
- Pro vs anti ... vax, masks, lockdown
- Increasing piety vs “lawlessness, pleasure, & sin”
- Altruism vs self-interest
- Authoritarianism vs libertarianism

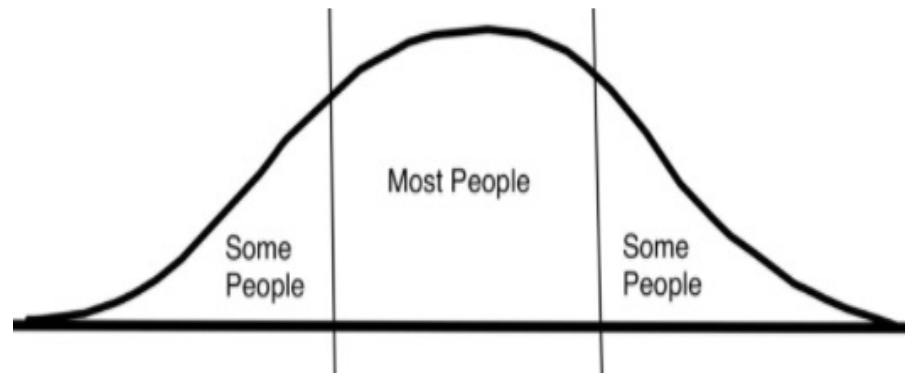


## Attitude Polarization



- Uncertainty invites speculation and rumors
- Like-minded people share common views
- Repeated expression of beliefs within a group of like-minded people:
  - Increase perceived truth of beliefs (repetition effect)
  - Exposes people to arguments supporting beliefs and to refutations to counter-arguments
  - Encourages extreme forms of beliefs
- Extreme attitudes are typically resistant to change

## COVID Stress Study



- Evidence for:
  - COVID Stress Syndrome
  - COVID Disregard “Syndrome”
- Extreme ends of a continuum; ~ 10-15% at each end



# WHAT IS COVID STRESS SYNDROME?

## COMPONENTS

COVID Stress Syndrome is characterized by five related facets: danger and contamination fears, socioeconomic concerns, xenophobia, traumatic stress, and compulsive checking and reassurance seeking.



## ASSOCIATIONS

People with more severe COVID Stress Syndrome are more likely to be anxious or depressed, stockpile supplies, experience distress during voluntary self-isolation, and avoid public places or transportation.



ANXIETY OR DEPRESSION



SELF-ISOLATION DISTRESS



PANIC BUYING



AVOIDANCE BEHAVIOURS

# WHAT IS COVID DISREGARD SYNDROME?

## COMPONENTS

COVID Disregard Syndrome involves believing that the COVID-19 threat is exaggerated, believing one will be largely unaffected from COVID-19 infection, and a disregard for social distancing.



## ASSOCIATIONS

People with more severe COVID Disregard Syndrome are more likely to have poorer COVID-19 hygiene practices (e.g., hand washing) and stronger COVID-19 anti-vaccination attitudes.



POORER COVID-19  
HYGIENE



COVID-19 ANTI-VACCINATION  
ATTITUDES

# Personality Traits

# Personality Traits

## Distress **protective** factors

- Hardiness:
  - Commitment, control, challenge
- Trait optimism

## Distress **Vulnerability** factors

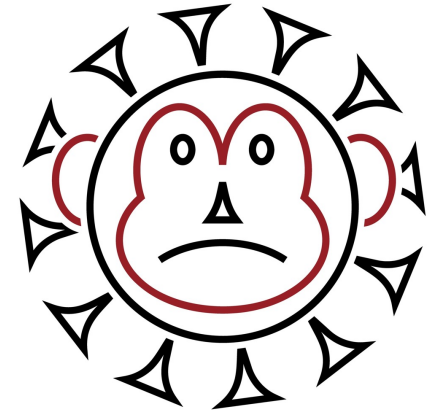
- Negative emotionality
  - Overestimation of threat
  - Worry proneness
  - Intolerance of uncertainty
- Disgust sensitivity
- Perceived vulnerability to disease

## **Non-adherence** factors

- Psychological reactance
- Boredom proneness
- Dark traits; e.g.,
  - Psychological entitlement
  - Negative social potency

# Disgust Sensitivity

- Trait: Propensity to readily experience strong disgust
- High levels of disgust sensitivity are associated with...
  - Germ phobia
  - OCD
  - Xenophobia
- Linked to stigmatization
  - Sickly people
  - Elderly, infirm, handicapped



# Psychological Reactance

- An allergic reaction to being told what to do; “You’re not the boss of me!”
- Leads people to strengthen their reasons for refusing to do something
- Nudges?

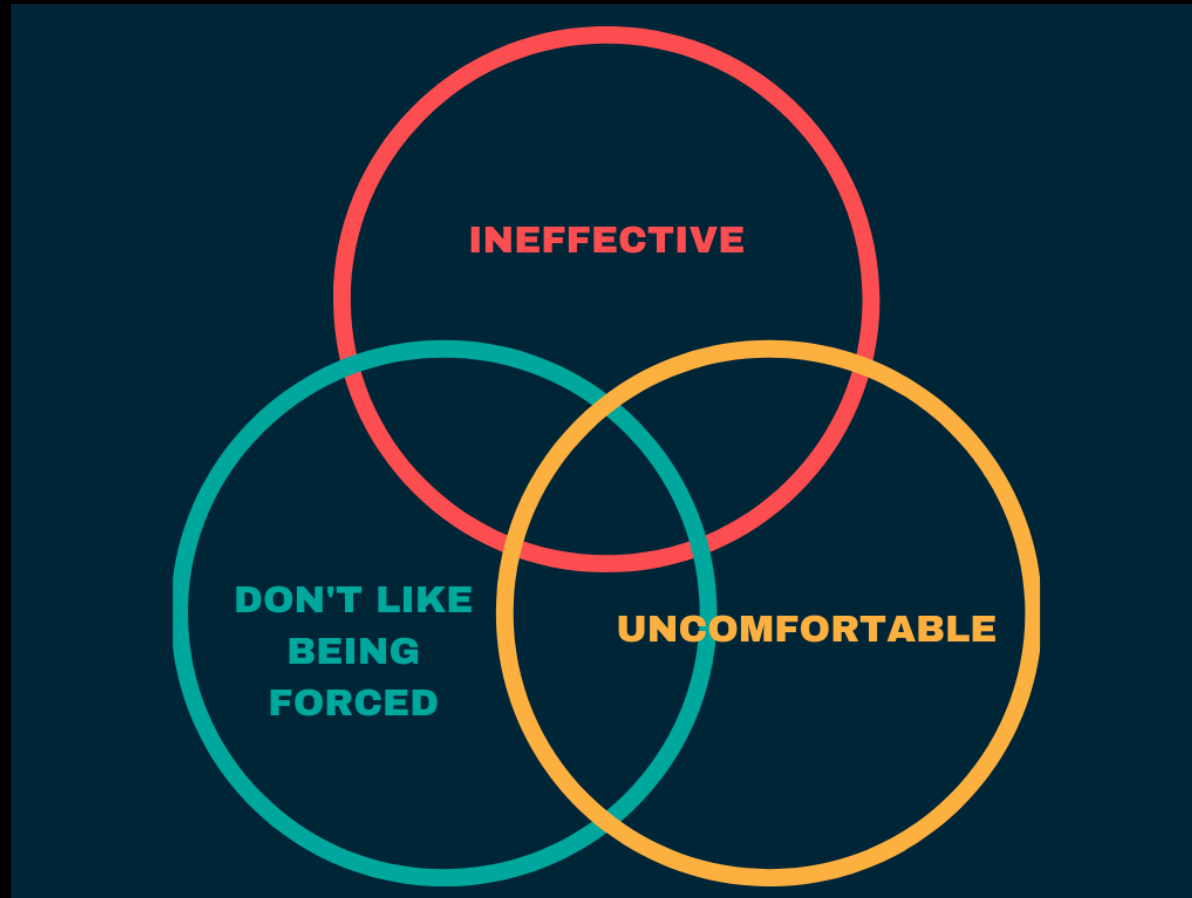


# The Anti-Mask League, 1919

**ANTI-MASK  
MEETING**  
**TONIGHT (Saturday) JAN. 25**  
**DREAMLAND RINK**  
To Protest Against the Unhealthy Mask Ordinance  
Extracts will be read from State Board of Health  
Bulletin showing compulsory mask wearing to be a failure.  
**Eugene E. Schmitz and other interesting speakers.**  
Admission Free.

*A clipping from the San Francisco Chronicle on January 25, 1919. [The San Francisco Chronicle](#).*

# Resistance to Wearing Face Masks





# Coping During Pandemics

# Coping

- Coping can be adaptive, maladaptive, or somewhere in between
- Emotion-focused coping
  - e.g., nostalgia, dark humor, religious coping, giving and receiving social support
- Problem-focused coping
  - Search for cues to danger and safety; e.g., 1527, Machiavelli's morning walks
  - Fleeing
  - Panic buying, seeking cures and preventives
  - Superstitious coping
  - Coping based on the illusion of control

# "Lord Have Mercy" broadsheets, 1665

- Targeted ordinary citizens
- Official mortality statistics
- Illustrations
- Prayers
- "Plague remedies"
- Interactive

**LONDON'S**  
**LORD HAVE MERCY UPON US.** 23

A true Relation of Seven modern *Plagues* or *Visitations* in *London*, with the number of those that were Buried of all Diseases; viz. The first in the year of *QUEEN ELIZABETH*, Anno 1593. The second in the year 1603 (that never to be forgotten year) 1615. The fourth Anno 1630. The fifth in the year 1636. The sixth in the year 1637, and 1638. The seventh the present year, 1665.

**Yearly Burials**

Year	1593	1603	1615	1630	1636	1637	1638	1665
March	1211	1111	1111	1111	1111	1111	1111	1111
April	1211	1111	1111	1111	1111	1111	1111	1111
May	1211	1111	1111	1111	1111	1111	1111	1111
June	1211	1111	1111	1111	1111	1111	1111	1111
July	1211	1111	1111	1111	1111	1111	1111	1111
August	1211	1111	1111	1111	1111	1111	1111	1111
September	1211	1111	1111	1111	1111	1111	1111	1111
October	1211	1111	1111	1111	1111	1111	1111	1111
November	1211	1111	1111	1111	1111	1111	1111	1111
December	1211	1111	1111	1111	1111	1111	1111	1111
<b>Total</b>	<b>12110</b>	<b>11110</b>	<b>11110</b>	<b>11110</b>	<b>11110</b>	<b>11110</b>	<b>11110</b>	<b>11110</b>

**Plague Remedies**

Take a pint of new Milt, and cut two cloues of Cardus very small, put it in the mill, and drink in morning fasting, and preferres from infection.

Return, return, unto thy loving Father,  
 Return I lay with speed, to match the other,  
 Because his Son the Saviour pleased thy cause,  
 Though thou had broken all his holy Lawes:  
 Say to thy self, My fins are culd of all,  
 Gods Judgements doe upon this land and do fall,  
 And for the cause that each one doth complain,  
 They have no more, than time to live again,  
 Say to thy self, this Plague may be removed,  
 If I repent, as playntly may be showed,  
 By Mowse, that say grace and legge,  
 The Lord hath given unto his Angell Charge,  
 To strike and to forbear as he lists fit;  
 If it be fo, then learnt thou to match witt,  
 To do thy best endeavout to prevent  
 A plague, which thou sayst do if thou repent  
 As all Infidels should be thy Traite  
 And make this Wif, that time may be the next.  
 The Lord Creff still is us'd, as it hath bin.  
 To those say Christians are there waint;  
 And God have mercy on us on the doore,  
 The World thus attend's the booke of sorrow,  
 Pass thee in hand, to pray for them cheerefull,  
 When death's sicknes came with such a palle,  
 He may attend upon thy houle to morrow,  
 Oh where's the sower we to our God have made,  
 And haile'd our Brethren up in heaps apace,  
 Even forty thousand in a little space:  
 The Plague amongst us is not yet removed,  
 Because of this is still beloved,  
 Each peddler of Death and Funerals,  
 Put thee and I in mind, We must die all.

**Plague Burials**

Year	1593	1603	1615	1630	1636	1637	1638	1665
March	1211	1111	1111	1111	1111	1111	1111	1111
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LONDON, Printed for *FRANCIS CALVEY*, 1665.

# Superstitious Coping

- Disease modeling and *homo economicus*
- People are superstitious, especially when it comes to fighting off invisible forces
  - 80% of high-rise buildings lack a 13<sup>th</sup> floor
  - 70% of US students use good luck charms to improve academic performance
- Omens, stigmata (danger signals)
- Amulets, talismans (safety signals)
- Rituals (lucky behaviors); e.g., “sulphur in shoes”
- Rituals bolster an illusion of personal control
- Superstitious rituals are more likely when the stakes are high
  - e.g., baseball players
  - COVID-19: higher fear of infection associated with greater use of superstitious behaviors





DESIGNED BY P. DE WARDEN. FROM A SKETCH BY OUR SPECIAL ARTIST, H. CRESSWELL.

A fierce outbreak of cholera has been ravaging St. Petersburg for some weeks past, and between five and four hundred fresh cases are reported daily. In combating the pestilence the authorities find their difficulties immensely increased by the crass ignorance and superstition of the lower classes, who trust rather to the virtue of charms and amulets than in preventive measures, bits made of old copper coins and rained groves being considered particularly efficacious and commanding a high sale. By order of the Governor a free distribution of hot tea is now being made in all the streets where the poor reside, to discourage them from drinking contaminated water.

The Cholera Scare in St. Petersburg: Combating the Epidemic with Amulets and Hot Tea

LIFE

## LIFE Magazine, 1908

“... In combating the pestilence the authorities find their difficulties immensely increased by the crass ignorance and superstition of the lower classes, who trust rather to the virtue of charms and amulets than in preventive measures ...”



President Andrés Manuel López Obrador showing amulets that he says protect him from the coronavirus. Mexican Presidency/Agence France-Presse — Getty Images

Illusion of Control:  
Not always a bad thing



Popular

Latest

*The Atlantic*

IDEAS

# Hygiene Theater Is a Huge Waste of Time

People are power scrubbing their way to a false sense of security.

JULY 27, 2020



**Derek Thompson**

Staff writer at *The Atlantic*



GETTY / THE ATLANTIC



# Coping Fads Spread by Rumours

- Coping fads are common during pandemics
- Plague of Justinian, Constantinople, 543AD:  
A rumour spread that if you threw pitchers from upper storey windows and they burst below on the street, then death would flee from the city; “Everybody succumbed to this foolishness”
- Sometimes based on a grain of truth  
E.g., avoiding vegetables (Cholera, 1849)
- COVID-19: Alcohol as “preventive”



2020



**ALCOHOL POISONING  
KILLS 480 IN IRAN**



# Lockdown: Effects and Alternatives



# Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic



COVID-19 Mental Disorders Collaborators\*

- Increases in disorders:
  - Major depression 28%
  - Anxiety disorders 26%
- Increases greater with:
  - Higher infection rates
  - Greater restrictions on mobility
- Greater in women and younger adults
- Transient vs. persistent?

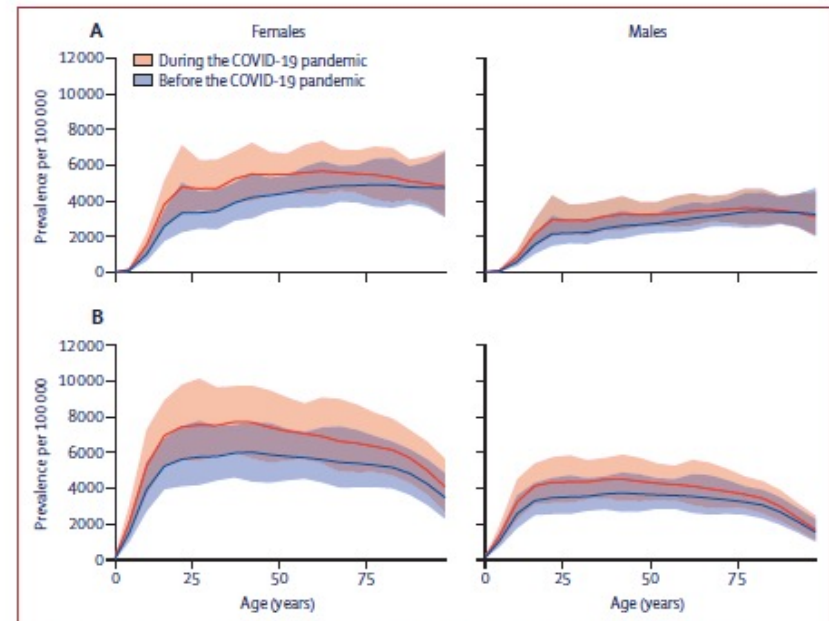


Figure 1: Global prevalence of major depressive disorder (A) and anxiety disorders (B) before and after adjustment for (ie, during) the COVID-19 pandemic, 2020, by age and sex

# Lockdown

- Shelter-in-place orders and closures
- Centuries of controversy
- The “catch-and-release” problem of recurrent lockdowns
- Pandemic fatigue
- Use sparingly
- Alternatives to lockdown
  - Targeted self-isolation protocols; test-trace-isolate
  - App-based: *Advanced Automated Contact Tracing and Targeted Isolation*
  - Issues: Privacy, discrimination, adherence

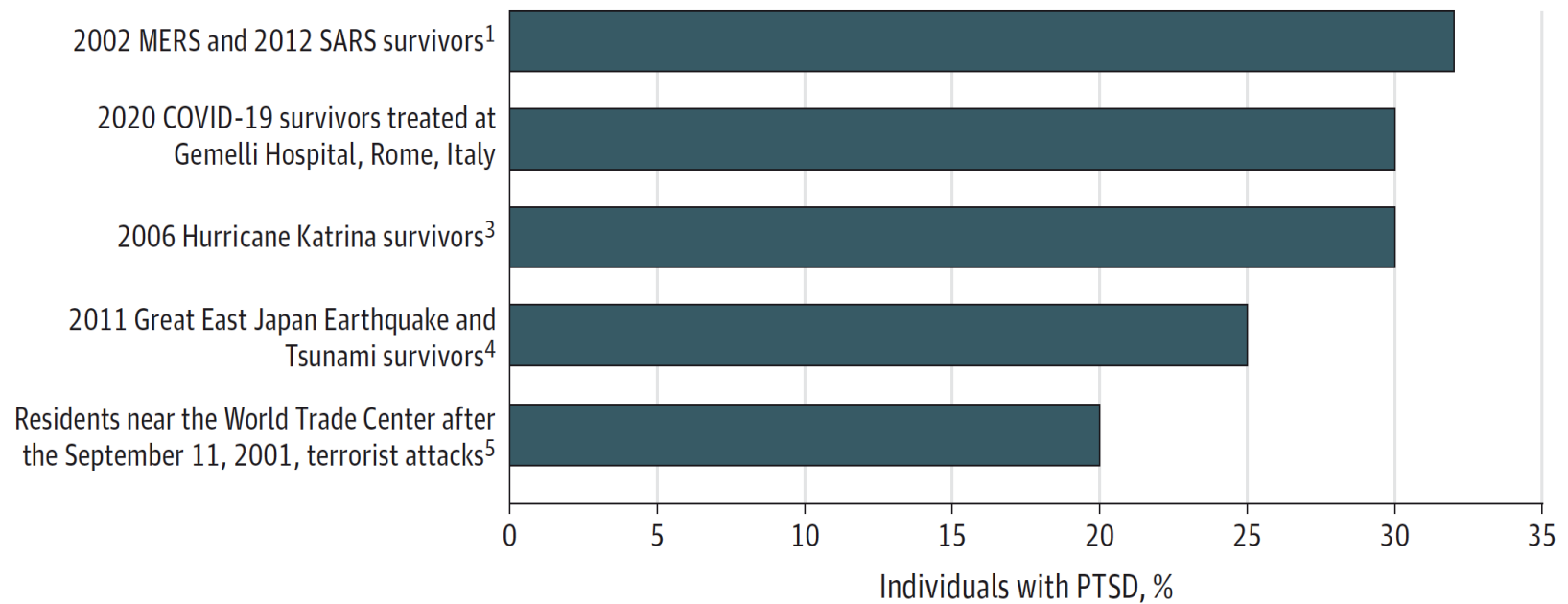
# Pandemics and Mental Health

# Resilience

- Most people are resilient to stress
  - Bounce-back is the norm
- A substantial minority of people (15%?) may develop persistent psychological problems
  - e.g., mood and anxiety disorders, OCD, PTSD, germ phobias
  - higher prevalence in particular sub-populations
- Resilience can be increased, within limits, by training in coping skills
- Posttraumatic growth is common: Thriving through adversity

# PTSD and COVID-19

Figure. Posttraumatic Stress Disorder (PTSD) After COVID-19 Infection and Other Collective Traumatic Events





# Other Clinical Conditions

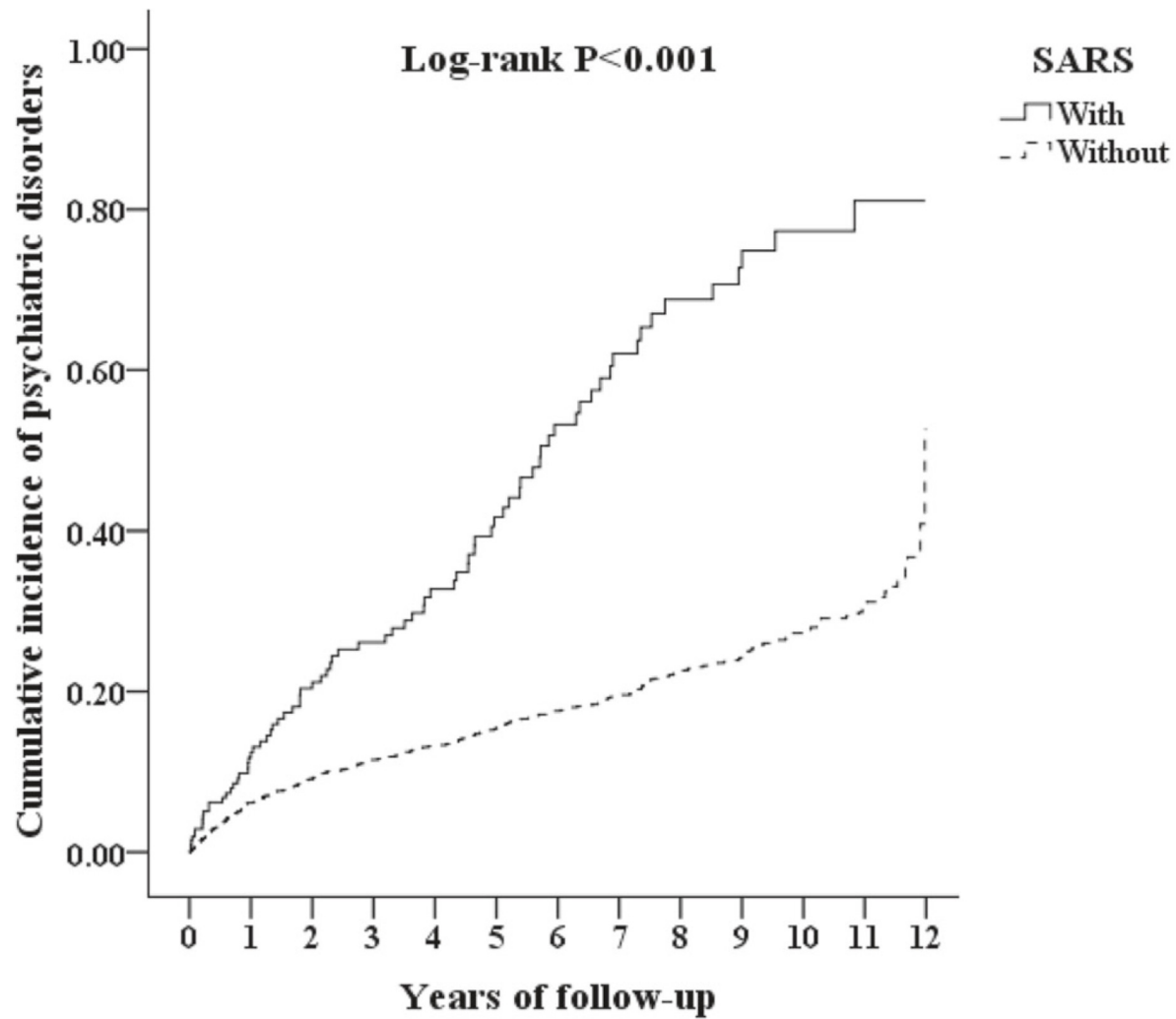
- Suicide
  - SARS, Spanish flu, Russian flu
  - Linked to economic recessions
  - COVID-19: Mixed findings
- Prolonged grief disorder
- Hikikomori
- Addictive behaviors
  - Problem gambling → switching addictions
  - Role of boredom proneness
  - Treatment of boredom proneness?  
Mindfulness?



# Long COVID



- Term coined by patients
- Chronic fatigue, dyspnea
- Shifting symptoms
- Relapsing/remitting
- Stigma
- Treatment?



# Mental Health Resources

- Telehealth
- CBT phone apps
- Comprehensive, integrated programs
- Method for enhancing HCW resilience
- Inevitable rise of AI-assisted therapy



## MindShift CBT - Anxiety Relief

Manage anxiety & be mindful

Anxiety Canada Association

Designed for iPad

#81 in Health & Fitness

★★★★★ 4.4 • 345 Ratings

Free

[View in Mac App Store ↗](#)



## COVID Coach 4+

Cope with stress & stay well

US Department of Veterans Affairs (VA)

Designed for iPad

★★★★★ 4.8 • 599 Ratings

Free

[View in Mac App Store ↗](#)

## COPING WITH COVID-19

While some offices may be closed, BounceBack program coaches are still here for you by phone and online. Visit the [adult](#) or [youth](#) page to learn more and get started.

### Online Referrals for BounceBack Coaching

You can now submit online referrals for our free coaching program. If you have a family doctor, nurse practitioner or psychiatrist, you can sign up online yourself. If not, you can book an online appointment with a primary care provider to get your referral.

**Chengdu, Sichuan Province, China**



The leading group



 **Live media group**



**Hotline consultation group**

 **Online video intervention group**



 **On-site crisis intervention group**



He et al., 2020, *Int J Biol Sci*, 16, 2828-2834.



# Enhancing the Resilience of Frontline Healthcare Workers

- Needs assessment
  - Stress management is not enough...
- Infrastructure, work environment
  - Adequate staff, sufficient resources, solid leadership, workplace culture...
- Resilience training
- Mental health practitioners embedded in clinics & wards
- Peer support
- Buddy system
  - Matched on demographics, professional roles, seniority
  - Check-in, debrief, mutual support

Albott CS et al. 2020. *Anesthesia and Analgesia* 131: 43-54  
Wei EK et al. 2020. *Health Security*

# Implications for Future Pandemics

- Psychological phenomena are remarkably consistent across pandemics
- Most people are resilient, within limits
- Expect a rise in mental health problems in future outbreaks
- Expect to see unusual coping strategies (coping fads)
- Protests, including violent protests, are more common than people expect
- Use lockdown sparingly
- Innovations in mental health services show promise