

# Topic 6: The Psychological Costs of Poverty

EC 404: Behavioral Economics  
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# Direct Poverty-Induced Deprivations

- ▶ Poverty engenders other deprivations beyond money, including:
  - ▶ Malnutrition (Food and of the United Nations , FAO; Schofield, 2014)
  - ▶ Higher levels of stress (Haushofer and Fehr, 2014)
  - ▶ Sleep deprivation (Grandner et al., 2010; Patel et al., 2010)
  - ▶ Noise pollution and heat (Harlan et al., 2006; Dean, 2018)
  - ▶ Stigma, social exclusion (Hall et al., 2014; Ghosal et al., 2017; Chandrasekhar et al., 2018)
  - ▶ Physical pain
  - ▶ **Mental ill-health**
- ▶ Research in other fields often establish the impact of each of these deprivations on health and cognitive function (Dean et al., 2018).
- ▶ Need for more evidence on the connection to economic outcomes e.g. Schofield (2014) on effort discounting, Bessone et al. (2019) and Kaur et al. (2019) on productivity

- ▶ What is mental health?
  - ▶ How common is mental ill-health?
  - ▶ Why study mental health as an economist?
- ▶ Mental health and economic behavior
  - ▶ How are mental health and poverty related?
  - ▶ What do we know already?
- ▶ Some recent work related to mental health
  - ▶ The economic consequences of depression (in Goa, India)
  - ▶ Psychological first aid (in Tamil Nadu, India)
  - ▶ Loneliness and depression among the elderly (by Frank Schilbach, in Tamil Nadu)
  - ▶ Online mental health services (in the US)
  - ▶ Demand for mental health services (in Tamil Nadu, India)

# What is (Healthy) Mental Health?

- ▶ **Broad definition:** “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”
- ▶ Includes happiness and life satisfaction, and symptoms associated with anxiety and mood disorders such as depression.
- ▶ Focus here on common mental disorders: depression and anxiety (PTSD also common)
- ▶ Less common disorders: schizophrenia, bipolar disorder, etc.

# What are Depression and Anxiety?

## ▶ **Depression (Major Depressive Disorder)**

- ▶ Constellation of symptoms including changes in psychomotor function, weight loss, oversleeping or under-sleeping, decreased appetite, fatigue, difficulty concentrating, extreme feelings of guilt or worthlessness, and suicidal ideation.
- ▶ Diagnosis requires a set of these symptoms to be present over a two-week period

## ▶ **Anxiety (Generalized Anxiety Disorder)**

- ▶ Characterized by long-lasting and excessive fear and worries over at least a six-month period, with three or more of the following symptoms: restlessness, fatigue, concentration problems, irritability, muscle tension, and problems with sleep.
- ▶ Other definitions (e.g. ICD-10) require presence of at least one physical symptom such as heart palpitations, difficulty breathing, nausea or abdominal distress, dizziness, or numbness.

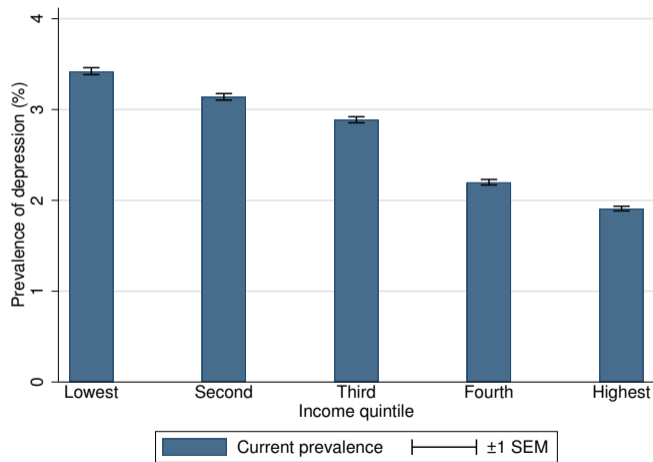
# How Do We Measure Depression and Anxiety?

- ▶ Gold standard: in-depth diagnosis by trained psychiatrist
  - ▶ Not feasible in many settings
- ▶ Short screening surveys
  - ▶ PHQ-9 survey for depression
  - ▶ GAD-7 survey for anxiety
  - ▶ Geriatric Scale for the elderly
  - ▶ Ali et al. 2016: overview of validated screening tools
- ▶ Phone surveys feasible but privacy concerns and possibly downward bias

# How Common Are Depression and Anxiety?

- ▶ **At least 3 to 4% of the world's population suffers from each at any given time**
  - ▶ World's leading cause of years lived with disability globally (8% of YLD)
  - ▶ Almost 20% of US experience clinical significant episode of depression in their lives.
  - ▶ Highly recurrent: 75% of depressed patients have more than one depressive episode;
  - ▶ 1/2 to 2/3 of people ever clinically depressed are in an episode in any given year
  
- ▶ Who is most affected?
  - ▶ Higher prevalence among women (about twice as high)
  - ▶ Higher prevalence among the poor in given location

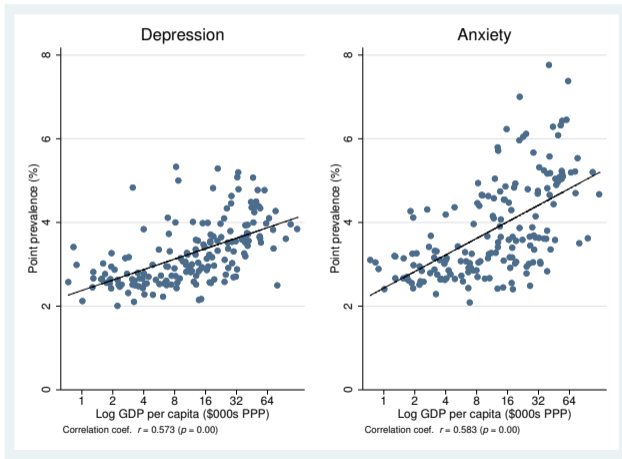
## Within Countries: Higher Prevalence Among the Poor



- ▶ Rates of depression, anxiety, and suicide correlate negatively with income, employment
- ▶ Relationship with consumption is weaker than that with income
- ▶ The poor are about 1.5 to 3 times more likely to experience depression and anxiety compared to the rich



# Across Countries: Perhaps *Higher* Prevalence in Rich Countries



- ▶ No evidence of higher prevalence in low-income countries
- ▶ **Note:** There are likely large differences in measurement across countries; this is an open area of research

# Why Study Mental Health?

- ▶ Mental ill-health makes people **profoundly unhappy**.
  - ▶ My personal objective function: maximize well-being!
  - ⇒ Subject to serious, non-trivial measurement challenges (e.g., reliance on self-reports)
- ▶ Mental health affects (often: shapes) **economic behavior**.
- ▶ **Economic forces** can affect mental health.

# How Might Mental Health Affect Economic Behavior?

- ▶ **Economic primitives**
  - ▶ Beliefs (levels and updating)
  - ▶ Time, risk, and social preferences
  - ▶ Decision-making (e.g. default effects, choice overload)
  
- ▶ **Labor supply, productivity, earnings**
  - ▶ Performance at work; might vary by type of work
  - ▶ Dealing with failure (resilience); job search
  - ▶ Earnings

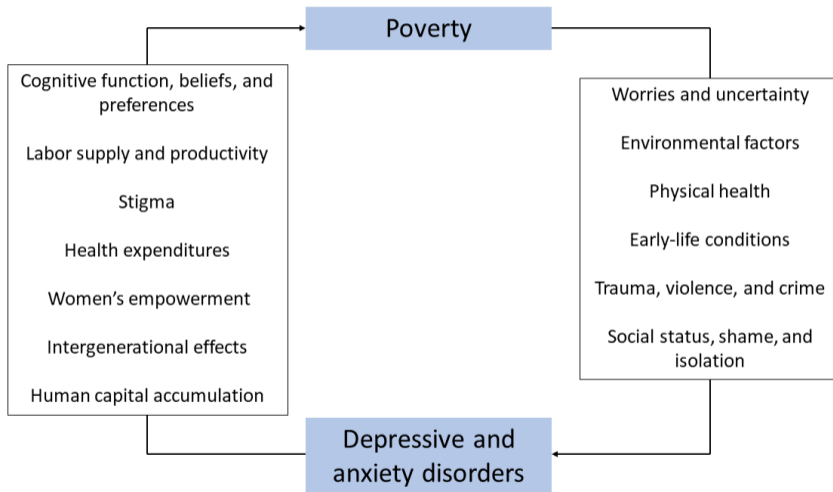
# How Might Mental Health Affect Economic Behavior? (cont)

- ▶ **Stigma and discrimination**
  - ▶ People with mental illness might be treated worse (or managed wrongly).
  - ▶ Such issues might prevent people from seeking treatment
- ▶ *Health behavior (e.g. exercise; medical non-adherence) and expenditures*
- ▶ *Female empowerment (e.g., control over resources; IPV)*
- ▶ *Human capital accumulation (e.g., schooling)*

# How Might Economic Forces Affect Mental Health?

- ▶ Economic shocks (e.g. unemployment, health shocks, death of a loved one)
- ▶ Volatility and uncertainty (e.g., lack of insurance, social safety)
- ▶ Environmental factors (e.g. sleeping conditions, pollution, heat)
- ▶ Early-life conditions (e.g. bad harvest, recession)
- ▶ Social status (relative vs. absolute poverty), shame, and isolation
- ▶ Exposure to trauma, violence, and crime

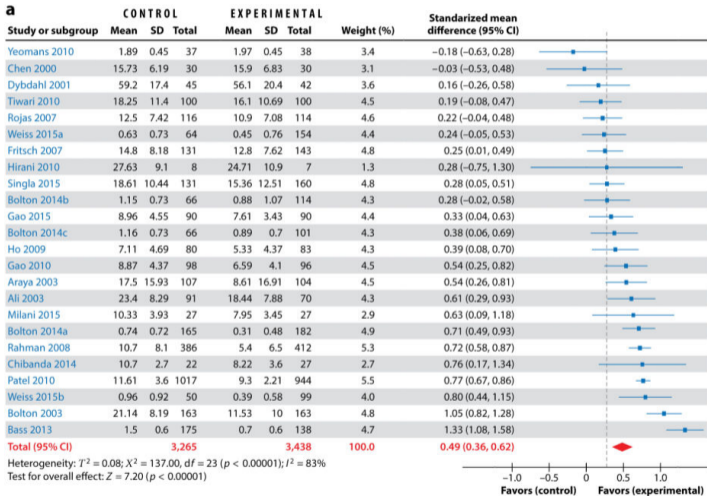
# Ridley et al. (2020): Poverty and Mental Health



# Increasing Supply of Mental Health Treatment

- ▶ Psycho- and pharmacotherapy are highly effective (Cuijpers et al. 2010; 2013)
  - ▶ But only few trained psychiatrists available in many settings
  
- ▶ **Alternative 1:** Inexpensive and scalable psychotherapy interventions can effectively treat depression and anxiety in low-income contexts. Examples:
  - ▶ Bolton et al. (2003): Interpersonal group therapy in Uganda
  - ▶ Rahman et al. (2008): CBT in Pakistan
  - ▶ Patel et al. (2017b): Behavior activation in India
  - ▶ Chibanda and et al. (2016): Problem-solving therapy in Zimbabwe
  
- ▶ **Alternative 2:** New technologies using internet, apps
  - ▶ Very promising results but mostly in efficacy trials (Cuijpers et al. 2019)
  - ▶ Key issues: take-up and adherence
  - ▶ Very little work in developing countries (Arjadi et al. 2015)

# Singla et al. (2017): Meta-analysis of Psychological Treatments in LMICs

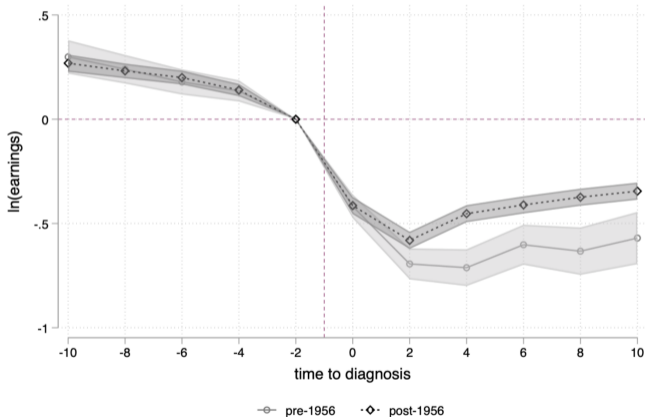


- ▶ Interventions implemented by **non-specialists**
- ▶ Inexpensive, scalable interventions
- ▶ Most trials address depression; also some work on PTSD and anxiety



# Access to Treatment can Mitigate Earnings Effects of Mental Ill-Health

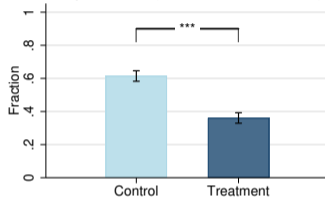
FIGURE 5— EVENT STUDY OF LN(EARNINGS)  
PEOPLE WITH BD WITH AND WITHOUT ACCESS TO LITHIUM



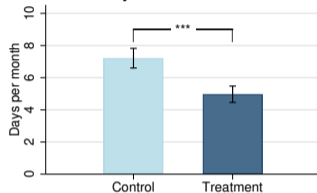
- ▶ Impact of approval of lithium for treatment of bipolar disorder
- ▶ Reduced the earnings penalty associated with bipolar illness by **a third in Denmark, from 38 to 26 percent.**

# Benefits of Non-Specialist Therapy in India (Patel et al., 2017a)

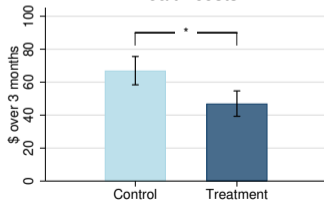
Depression (PHQ-9 score > 10)



Days unable to work

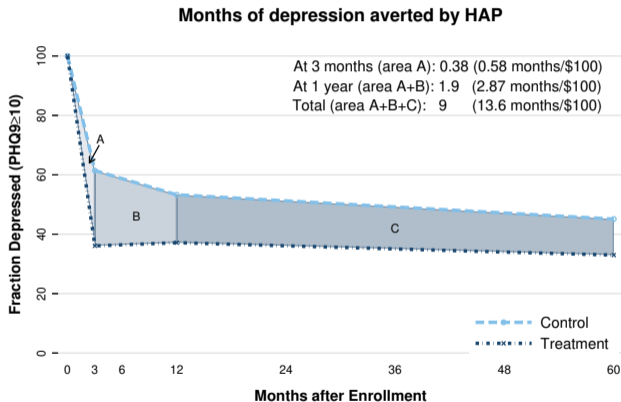


Health costs



- ▶ Healthy Activity Program (HAP): 6 to 8 sessions of non-specialist therapy (\$70 per person)
- ▶ Clear reduction in depression 3 months after treatment; benefits largely retained after 12 months.
- ▶ Increases in days worked; reductions in health costs
- ▶ Intervention likely paid for itself within a few months.

# Bhat et al 2022: Follow-Up of HAP (Five Years Later)



- ▶ Large and persistent effects on depression as long as five years after the intervention!
- ▶ Highly cost-effective: **\$7 per month of depression averted**

# Mechanism for Persistent Effects?

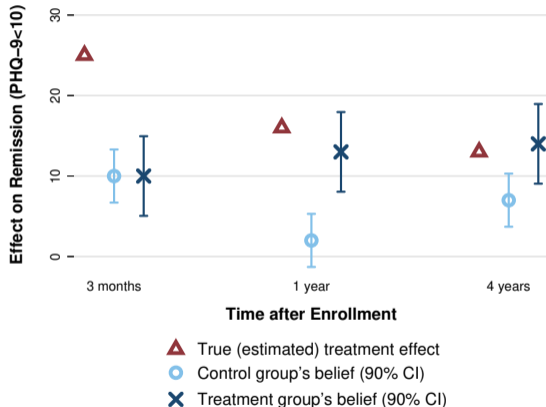
- ▶ Continued use of therapy in treatment group?
- ▶ Improvements in consumption/employment?
- ▶ Continued use of therapy in treatment group? **Lack of availability**
- ▶ Improvements in consumption/employment? **No effects**
- ▶ **Possibility:** Treated participants learn the principles or tools of behavioral activation + employ them to deal with future stresses
- ▶ **Mediation analysis:**
  - ▶ Short-run improvement in mental health is a strong mediator
  - ▶ Also role for extent of short-run behavioral activation

# Do People Understand Treatment Effectiveness?

**Stylized fact:** 85% of Indians with major depressive disorders go untreated (Gururaj et al. 2016)

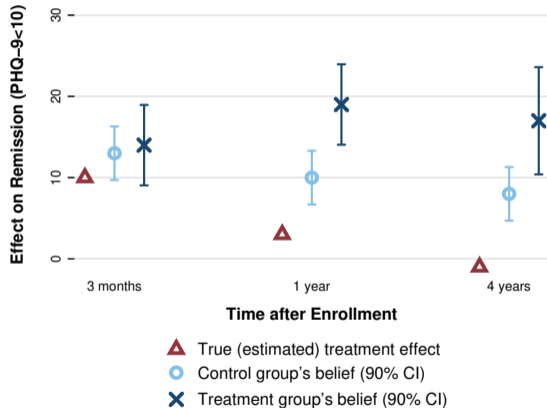
- ▶ Seemingly lower-than-expected demand for therapy worldwide
    - ▶ Under-use in rich countries e.g. Cronin et al. (2021)
    - ▶ Surveys in 13 countries: lack of familiarity and confidence in therapy (Sapiens Lab 2021)
  - ▶ Do people think therapy is effective? Does experiencing treatment change beliefs?
- ⇒ Elicit people's beliefs at endline about the treatment effects.

# Experiencing Treatment Increases Perceived Effectiveness of HAP



- ▶ Control group underestimates the persistent effects of the Healthy Activity Program.
- ▶ Experiencing treatment corrects beliefs about long-run effects.
- ▶ No effects on short-run beliefs

# But Increases Perceived Effectiveness of Ineffective Intervention(!)



- ▶ Experiencing therapy increases perceived effectiveness, even if the therapy is ineffective
- ▶ Interpretation: it is hard to learn effectiveness through experience when spontaneous improvement also occurs
- ▶ **Effective treatments may be underestimated and ineffective ones overestimated**

# How Does Therapy Affect Beliefs about Oneself?

- ▶ Exploration of the causal effect of psychotherapy on self-confidence
- ▶ And how self-confidence evolves in response to feedback
  - ▶ Modern evidence of optimistic belief-updating in response to feedback  
Eil & Rao 2011; Mobius et al. 2014; Zimmermann 2020
- ▶ Alternative hypotheses:
  - (1) **'Sadder but wiser'**: Treating depression generates more overconfidence  
Korn et al. 2014; Alloy & Abramson 1979
  - (2) **'Protective optimism'**: Therapy → more accurate views about self

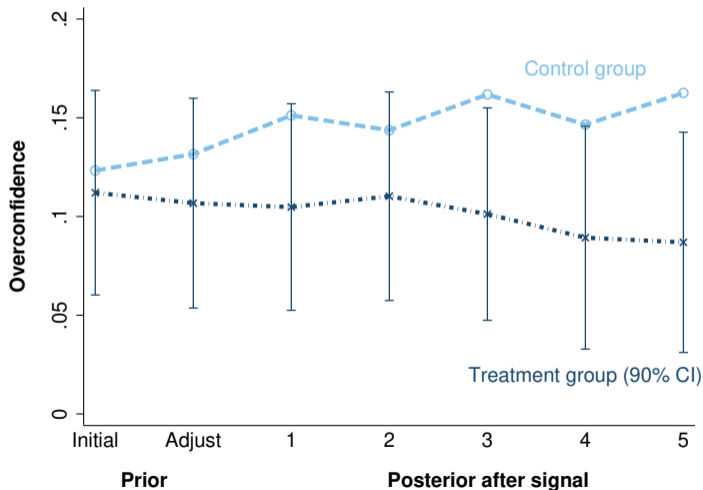


# Paradigm (Adapted from Möbius et al. 2021)

- (1) Participants perform a “self-image relevant” task
  - ▶ Making bracelets – mimics realistic jobs
- (2) Elicit prior on relative performance
  - ▶ Probability of above-median performance
- (3) Provide noisy signal of truth
- (4) Repeat ...

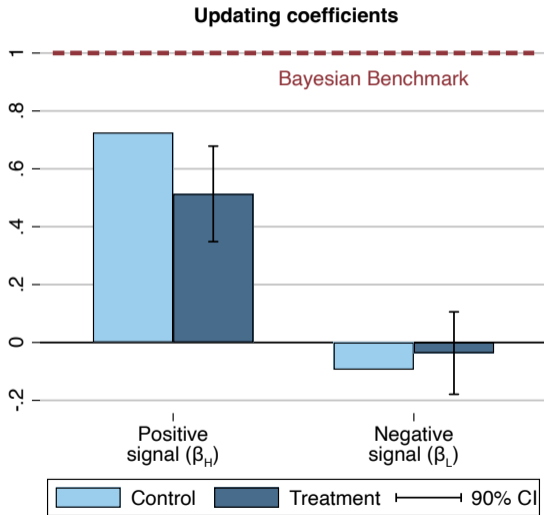
Benchmark: **Bayes' rule**

# Psychotherapy Causes *Less* Overconfident Updating



- ▶ Treatment group updates their beliefs **less** optimistically
- ▶ Final beliefs are significantly less overconfident than control group's.
- ▶ Suggest that treatment makes people "happier **and** wiser"

# Belief Updating Relative to Bayesian Benchmark

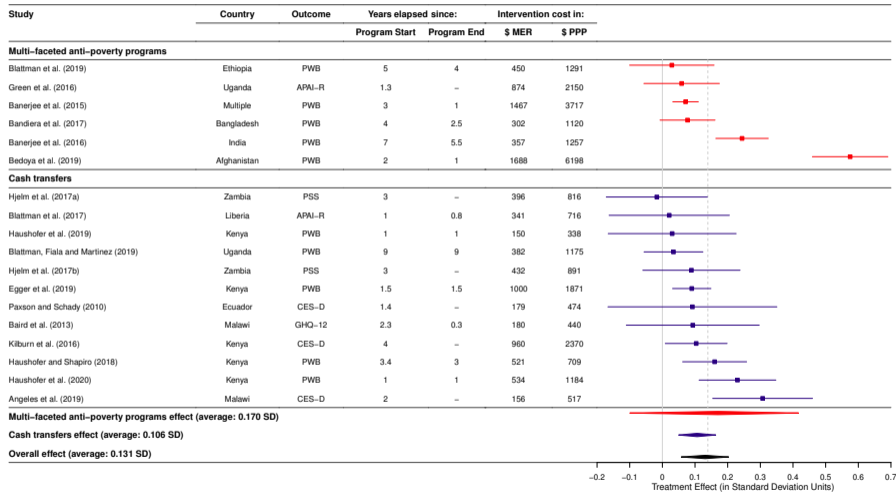


- ▶ Control group is close-ish to Bayesian for positive signals; entirely ignores negative signals.  
⇒ Over-optimistic belief updating
- ▶ Treatment group reacts less to positive signals; also ignores negative signals.  
⇒ Reduced over-confidence

# Impacts on Self-Confidence: Discussion

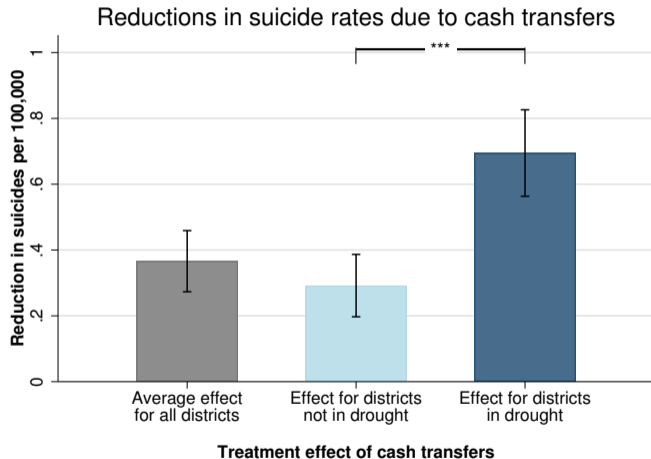
- ▶ Therapy *reduced* optimistic belief updating about performance in a work task.
  - ▶ Therapy made people *less* overconfident – people seem “happier AND wiser”.
- ▶ Changes in depression or mood may not be underlying mechanisms
  - ▶ Similar finding in THPP trial, despite no long-run treatment effect on depression
- ▶ Suggests direct effects of therapy itself
  - ▶ May help people see themselves and the world more realistically
  - ▶ Makes some beliefs less ego-relevant
  - ▶ Help get better at reacting to feedback evenhandedly

# Anti-Poverty Programs Improve Mental Health (Ridley et al. 2020)



- Both cash transfers and broader programs improve mental health.
- Cash transfers appear to have larger effects on mental health per dollar spent

# Cash Transfers Can Prevent Suicides (Christian et al. 2019)



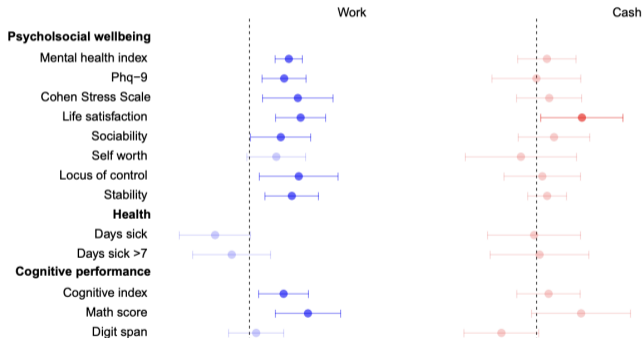
- ▶ Study exploits roll-out of cash-transfer program in Indonesia.
- ▶ Cash transfers cause 18% drop in suicides on average.
- ▶ Impacts larger in districts who experienced droughts.

# Early-Life Conditions Can Have Long-Lasting Impacts.

- ▶ Exposure to poverty early in life can threaten mental health in later years.
- ▶ Effects can be caused in utero, e.g. by exposing mothers to stress or malnutrition.
  - ▶ Death of mother's relative during pregnancy (compared to after childbirth) predicts depression among her grown children later in life (Persson and Rossin-Slater, 2018).
- ▶ Shocks in early childhood can be equally consequential.
  - ▶ Decrease in crop prices in Ghana at an individual's birth predicts increased incidence of anxiety and depression in adulthood (Adhvaryu et al., 2019).

**Corollary:** Programs that provide financial support for households with pregnant women or young children can have exceptionally high long-run mental health returns.

# Job creation can have benefits beyond their pecuniary value.



► Hussam et al. (2021): RCT with Rohingya refugees in Bangladesh

- (1) Some are offered jobs
- (2) Others given unconditional cash
- (3) Control group gets neither

► **Impacts of offering work larger than impacts of cash**



# A Realistic Outlook

## Aggregate economic conditions

- ▶ Higher income causes better mental health at the individual level, yet the prevalence of mental illness is not lower on average in rich countries
- ▶ Existing evidence shows a higher prevalence of common mental illness in richer countries
- ▶ Within-country inequality has increased in many countries despite significant reductions in extreme poverty and global inequality

## Climate change

- ▶ More frequent occurrences of extreme heat due to climate change is anticipated to exacerbate mental illness
- ▶ Increases conflict and migration, especially in low-income countries, leading to negative economic consequences

# A Realistic Outlook (cont)

## Pandemics

- ▶ Public health crises (i.e. COVID-19) tend to disproportionately affect those living in poverty
- ▶ Interventions to provide economic and psychological support to those in poverty are a critical response to such pandemics and natural disasters

## Technological change and globalization

- ▶ The cost to losers, especially low-wage workers in high- and middle-income countries that lose jobs because of changes in trade or automation can be long-lasting and substantial, resulting in significantly worse mental health

## ▶ Social media and phones

Good: the spread of mobile phones and internet opens up new opportunities for poverty alleviation and new ways to deliver mental health care

Bad: depression is correlated with internet addiction

# Implications for Research and Policy

- ▶ Policy tools
- ▶ Treatment gaps
- ▶ Increasing supply
- ▶ Stimulating demand
- ▶ Addressing poverty traps

# Externalities of Psychotherapies

Evidence suggests effectiveness beyond treating mental illness:

## **Self-efficacy** (McKelway 2019)

- ▶ Belief in own ability to attain desired outcomes
- ▶ Psycho-social intervention with women in rural India boosted self-efficacy and labor supply
- ▶ Bi-directional causal relationship between self-efficacy and labor supply in same setting

## **Stigma** (Ghosal et al. 2019)

- ▶ Psychological intervention aimed at mitigating the adverse effects of stigma
- ▶ Increase in savings and health-seeking

## **Loneliness** (Personal conjecture)

- ▶ Many migrants and elderly are profoundly lonely
- ▶ Correlational evidence of profound impacts on cognition, health, well
- ▶ Combination of CBT and increases connections might alleviate loneliness

# Hall et al. (2014): Self-Affirmation

- ▶ Individuals in Trenton NJ soup kitchen (average reported annual income: \$8,000)
  - ▶ Verbal description of an experience of feeling successful and proud
  - ▶ Improved cognitive performance (Raven's, Hearts & Flowers)
  - ▶ Increased interest in benefits programs
  - ▶ No effect of improved mood; no effect of self-affirmation on the rich
  - ▶ No economic choices or longer-term outcomes
- ? Open question: role of motivation and effort

# Blattman et al. (2015): Cognitive Behavioral Therapy

- ▶ What is CBT?
  - ▶ Therapeutic approach used to treat wide range of harmful beliefs and behaviors
  - ▶ Make people aware of and challenge harmful automatic patterns of thinking and behavior
  - ▶ Disrupt these patterns of thinking; foster better patterns by having people practice new skills and behaviors
  
- ▶ Group CBT (20 men each) with 999 highest-risk men
  - ▶ Effect on anti-social behavior (theft, robberies)
    - ▶ Short-run decline in self-reported anti-social behavior
    - ▶ Effects persist (one-year) if CBT is supplemented with cash grant
    - ▶ No hard data; but validation exercise
  
  - ▶ No effect on investment, income, employment
  
  - ▶ Shaky effects on self-control and non-cognitive skills
  
  - ▶ No direct measures of depression, happiness, stress, etc.

# Heller et al. (2015): Training to “Reduce Automaticity”

- ▶ Train Chicago youths and inmates to “reduce automaticity”
  - ▶ Automatic responses are effortless, but not necessarily fine-tuned to particular situation.
  - ▶ “Becoming a Man” program by non-profit: teach when and how to be less automatic
  - ▶ No attempt to delineate specific behaviors as “good”
- ▶ Large reductions in arrests and recidivism
- ▶ No measures of other, long-term economic outcomes

# Poverty and Aspirations

- ▶ Appadurai (2004); Ray (2006): aspirations not evenly distributed amongst rich and poor
  - ▶ Low levels of aspiration and hope can limit social mobility and contribute to a poverty traps (Ray, 2006; Dalton et al., 2015; Genicot and Ray, 2017).
- ▶ One challenge in this literature is modeling aspirations.
  - ▶ Recent work has made progress on this challenge but many open questions remain (Dalton et al., 2015; Genicot and Ray, 2017; Lybbert and Wydick, 2018).
  - ▶ Particular challenge: mapping theory into empirical objects that can be measured.
- ▶ Promising results on boosting aspirations from Bernard et al. (2014)



# Bernard et al. (2014): Aspirations in Ethiopia

- ▶ Individuals randomly invited to watch “aspirational” documentaries
  - ▶ **Videos** about people from similar communities who had succeeded in agriculture or business, without help from government or NGOs.
  - ▶ Increased savings, school enrollment & educational investment.
  - ▶ No effect on time use (leisure vs. work).
- ▶ Dercon et al. (in progress; Kenya)
  - ▶ Aspirational videos/exercises vs. GiveDirectly cash transfers vs. both
- ▶ My read: too good to be true?
  - ▶ Hard to believe that such videos can alleviate full-blown depression.
  - ▶ What is the mechanism?

# Poverty and Religion

- ▶ Banerjee and Duflo (2007) document that the poor spend considerable time and money on religious activities.
- ▶ Such activities are thought to foster positive outcomes that are favorable for economic well-being (Freeman, 1986; Gruber, 2005; Ellison, 1991; Gruber and Hungerman, 2008)
- ▶ Need for improved understanding of the causal relationships at play between religion and these outcomes.
- ▶ Bryan et al. (2018) make progress by randomizing invitations to receive a 15-week religious education program. They find their treatment increases both religiosity and income.

# Poverty and Mental Health: Open Questions

- ▶ Bi-directional causal relationship between poverty and mental health (Ridley et al. 2020)
  - ▶ What are the underlying channels? More evidence needed.
- ▶ Impacts of mental illness on economic behavior
  - ▶ Labor-market outcomes, decision-making (e.g. savings behavior, investment choices)
  - ▶ What are the economic mechanisms? Beliefs, preferences, other?
- ▶ Modeling depression
  - ▶ Entry and exit from depression
  - ▶ Interactions with economic opportunities?
- ▶ Optimal policy mix
  - ▶ Are there complementarities between economic policies and psychological treatments?
  - ▶ Psychological poverty traps?

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