

Behavioral Economics

Lecture 5: The Psychological Costs of Poverty

Professor Bushong



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?



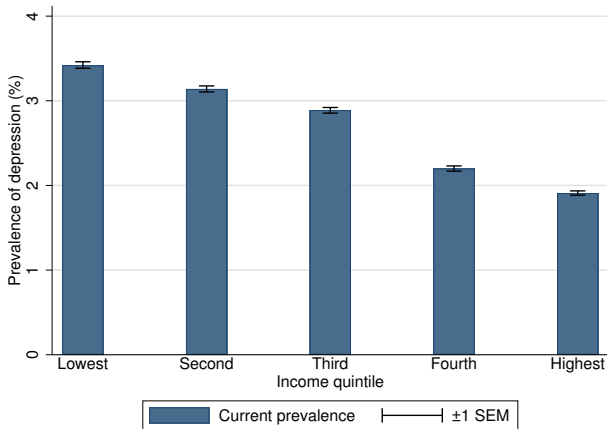
- Gold standard: in-depth diagnosis by trained psychiatrist
 - Not feasible in many settings
- Short screening surveys
 - PHQ-9 survey for depression
 - GAD-7 survey for anxiety
 - Geriatric Scale for the elderly
 - Ali et al. 2016: overview of validated screening tools
- Phone surveys feasible but privacy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

How Common Are Depression and Anxiety?

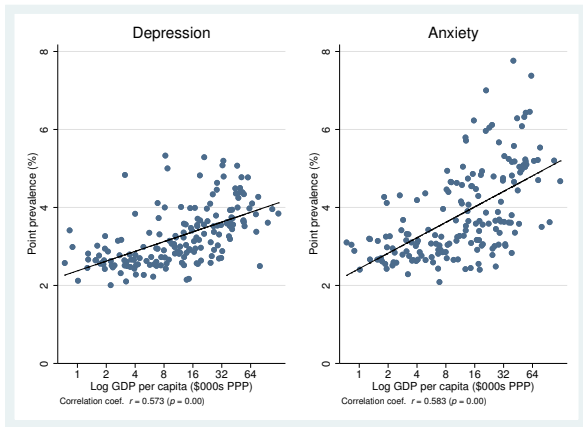


- **At least 3 to 4% of the world's population suffers from each at any given time**
 - World's leading cause of years lived with disability globally (8% of YLD)
 - Almost 20% of US experience clinical significant episode of depression in their lives.
 - Highly recurrent: 75% of depressed patients have 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



- 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



- 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.

Mental Health $\Rightarrow$ 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

Mental Health $\Rightarrow$ 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)*

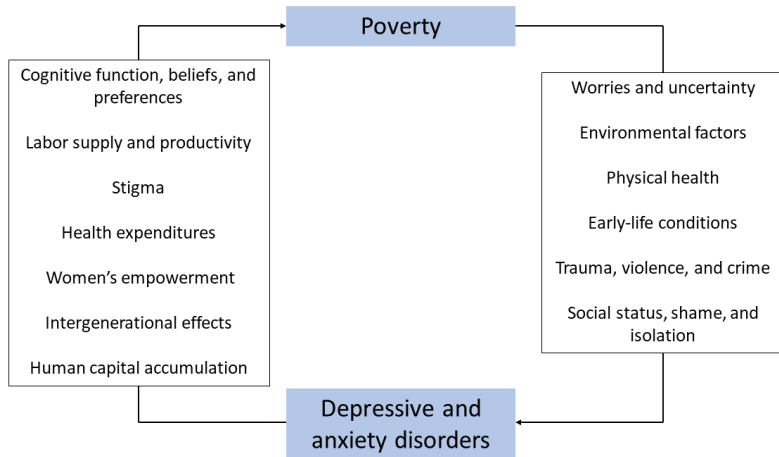
- *Human capital accumulation (e.g., schooling)*

Economic Forces $\Rightarrow$ 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

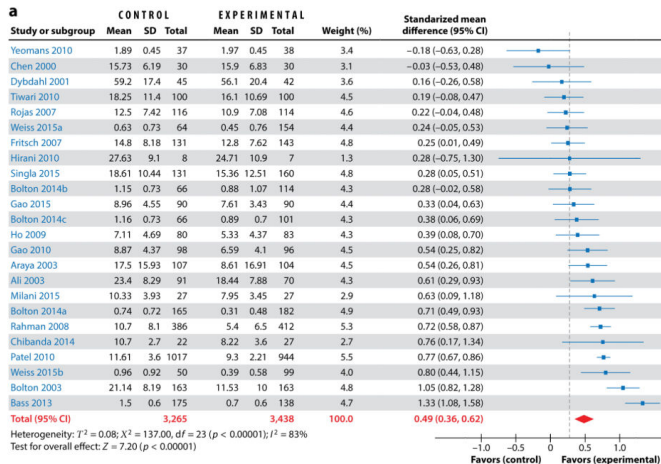




- Psycho- and pharmacotherapy are highly effective (Cuijpers et al. 2010; 2013)
 - But only few trained psychiatrists available in many settings

- **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. (2017): 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)

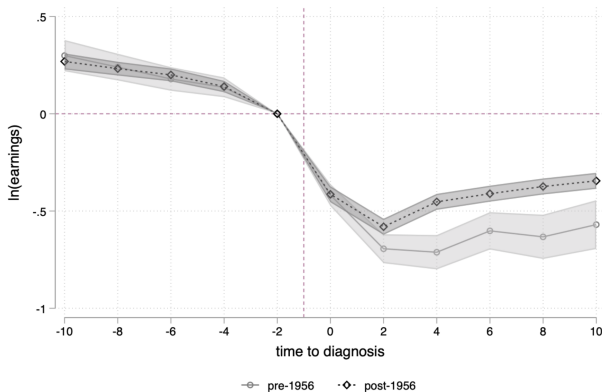


- Meta-analysis of Psychological Treatments in LMICs
- Interventions implemented by **non-specialists**
- Inexpensive, scalable interventions
- Most trials address depression; also some work on PTSD and anxiety

Treatment Improves Outcomes

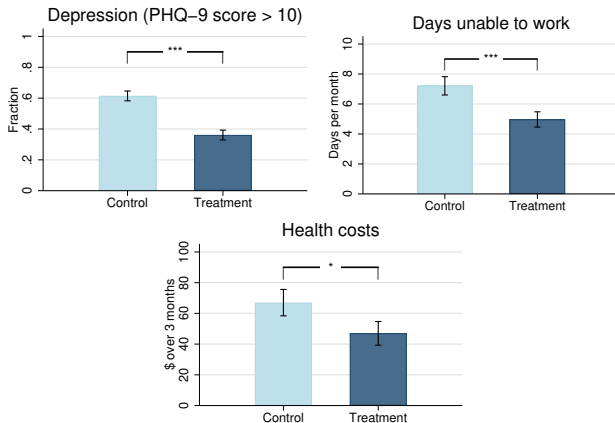


FIGURE 5— EVENT STUDY OF LN(EARNINGS)
PEOPLE WITH BD WITH AND WITHOUT ACCESS TO LITHIUM



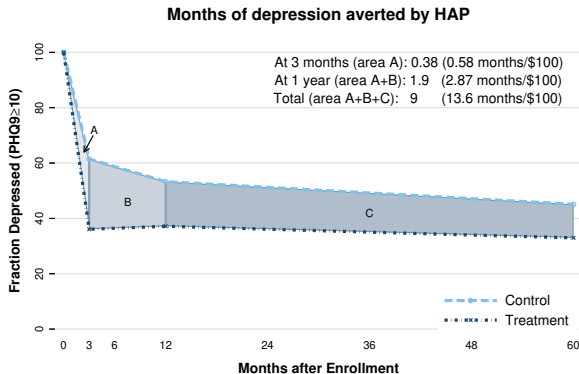
- Access to treatment can mitigate the negative earnings effects of mental ill-health
- Impact of approval of lithium for treatment of bipolar disorder
- Reduced the earnings penalty associated with bipolar illness by **a third in Denmark, from 38 to 26 percent.**

Benefits of Non-Specialist Therapy in India (?)



- 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: 5-Year Follow-Up of HAP



- 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

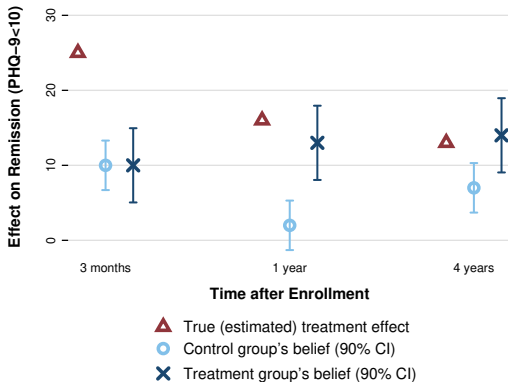
Do People Understand Treatment Effectiveness



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

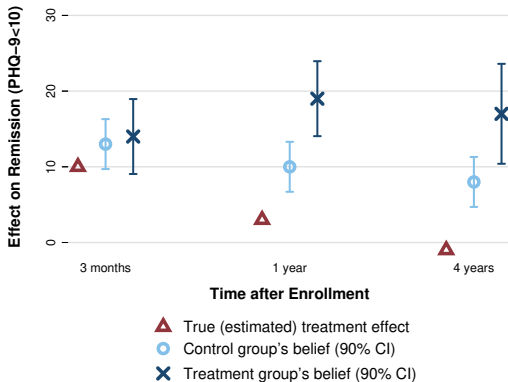
- Seemingly lower-than-expected demand for therapy worldwide
 - Under-use in rich countries e.g. Cronin et al. (2021)
 - Surveys in 13 countries: lack of familiarity and confidence in therapy (Sapiens Lab 2021)
 - Do people think therapy is effective? Does experiencing treatment change beliefs?
- ⇒ Elicit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

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

Perceptions Altered Universally



- 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?



- 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

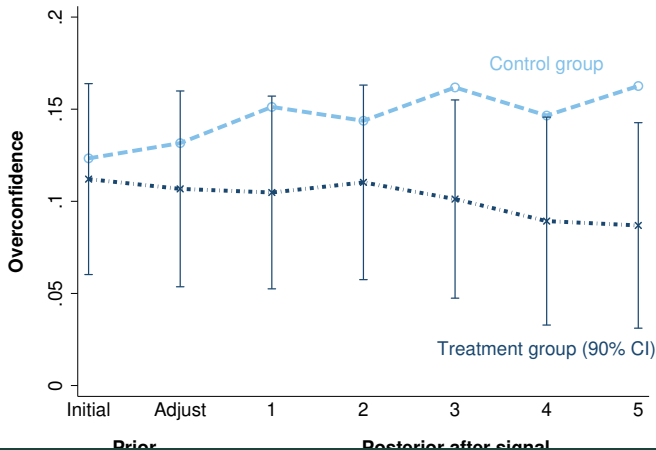
Paradigm (Adapted from Möbius et al. 2021)



- (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 ...

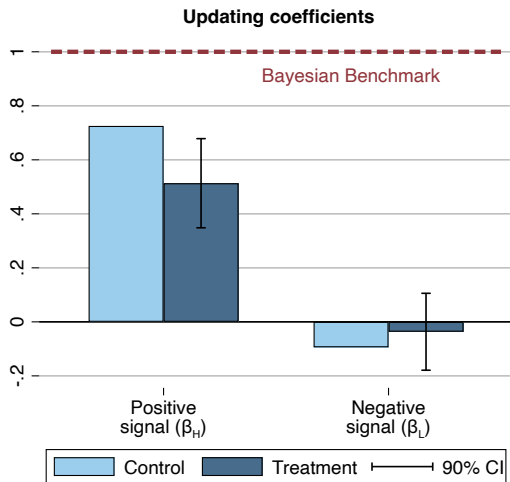
Benchmark: **Bayes' rule**

Psychotherapy and 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.

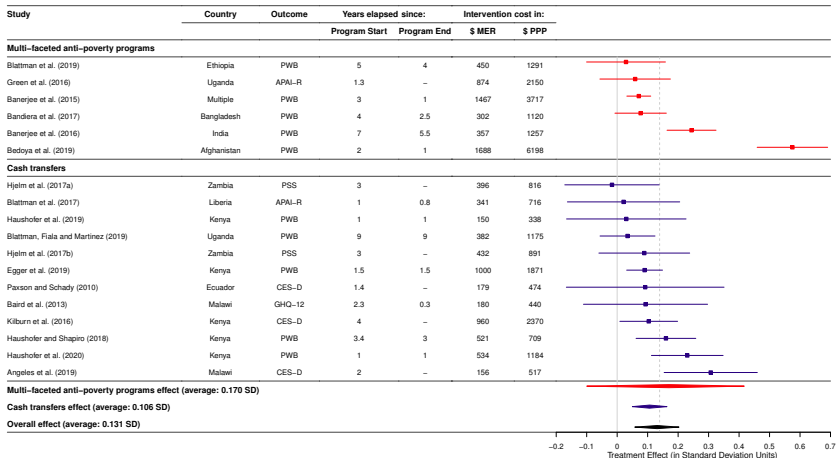
⇒ Reduced over-confidence

Impacts on Self-Confidence: Discussion



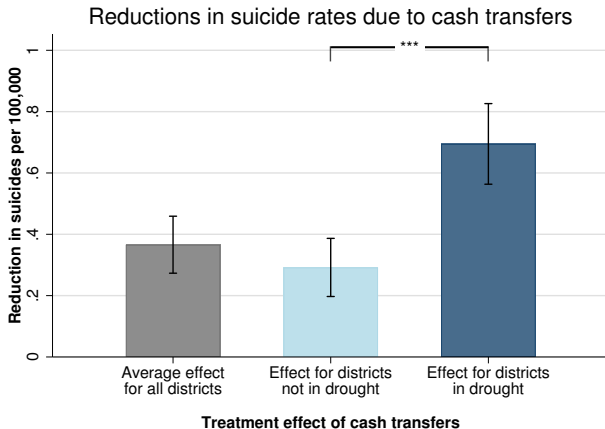
- Therapy *reduced* optimistic belief updating about performance in a work task.
 - Therapy made people *less* overconfident – people seem “happier AND wiser”.
- Changes in depression or mood may not be underlying mechanisms
 - Similar finding in THPP trial, despite no long-run treatment effect on depression
- 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



- 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 (Christiansen et al.)



- 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.

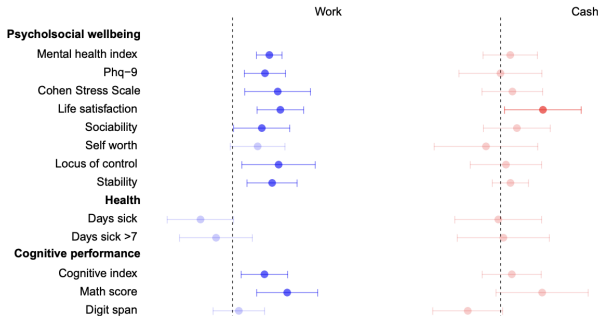
Early-Life Conditions Can Have Long-Lasting Impact



- 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 (?).
- 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 (?).

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 personal



■ ? : 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

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

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

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



- 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

- 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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