Experiencing a health shock increases risk aversion by 30% of a standard deviation (p=.026) for those with graduate degrees.

However, the regression explains only 3% of the variation in risk preferences. These findings are not robust to health shock or risk preference measurement.

Hypothesis: Income risk preferences are health-state dependent.

A finding of a nonzero effect of a health shock or health status on risk preferences will support this hypothesis.

Research Question

How do changes in health impact risk preferences?

Theoretical Model

Hypothesis: Income risk preferences are health-state dependent.

$$ U(w) = \frac{\left(w^{1-\alpha}W(H)\right)}{1 - \alpha W(H)} $$

A finding of a nonzero effect of a health shock or health status on risk preferences will support this hypothesis.

Data

UNC Alumni Heart Study
- Longitudinal study (1986-2014) of 6,298 UNC Alumni
- 1,507 respondents that answered the risk preference questions.

Risk Preference Measure
- Willingness to pay for hypothetical health insurance with an expected loss of $12,000

Combined Health Shock Measure
- Onset of severe condition in the last year
- Reported traumatic health shock
- Decline in self-reported health status

Sample characteristics
- 100% White
- 64% Male
- 65 Mean Age
- 18 Mean Years of Education
- 19% Experienced a Health Shock

Empirical Model

A relative risk aversion parameter was calculated for every individual, assuming constant relative risk aversion with respect to income. A linear regression of willingness to pay for the hypothetical health insurance supported this assumption.

$$ 1 \cdot \frac{(Y - x)^{-\rho}}{1 - \rho} = p_{\text{sick}} \cdot \frac{(Y - L)^{-\rho}}{1 - \rho} + (1 - p_{\text{sick}}) \cdot \frac{Y^{-\rho}}{1 - \rho}. $$

The mean respondent is risk-averse.

Novel measurement reveals wider range of risk preferences than previously found.

Transformation of Risk preferences

Range of Utility Functions

Empirical Model

Aims to identify the marginal effect of a health shock and health status on relative income risk aversion.

Health shocks are assumed to be missing randomly conditional on gender. Confirmed with a logistic regression

An instrumental variables model used to test endogeneity of income and health found both to be exogenous.

Thus, ordinary least squares model with robust standard errors used for primary results.

Results

- Experiencing a health shock increases risk aversion by 30% of a standard deviation (p=.026) for those with graduate degrees

- However, the regression explains only 3% of the variation in risk preferences.
- These findings are not robust to health shock or risk preference measurement.

Conclusion

- Income risk preferences are health-state dependent for individuals with a graduate degree.
- Health and risk preferences are inversely related.
- No strong evidence that health is highly relevant to relative risk aversion.
- Differences in risk preference measurement account for disagreement in the literature.
- Future studies may
  - Test alternate methods of eliciting the risk parameter
  - Allow the effect of health to vary over risk preferences

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