

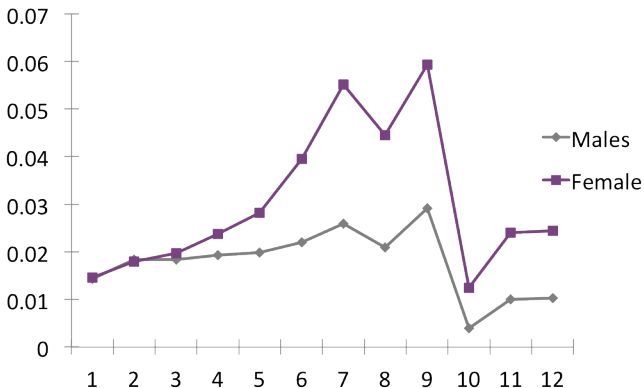
Negotiating a Better Future: Communication Skills, Intergenerational Investment, and Girls' Education in Zambia

Nava Ashraf, Corinne Low, and Kathleen McGinn

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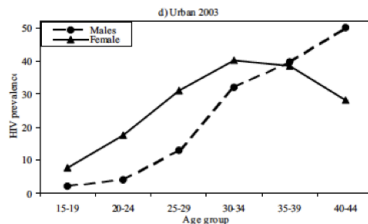
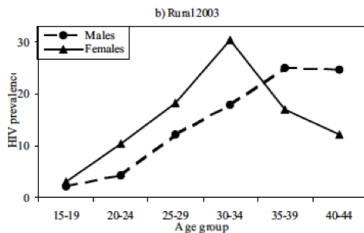
School Drop-Outs

Dropout Rates by Grade, Zambia 2007 DHS



- School drop-outs three times as high for girls as boys at peak
- Fees commence in 8th grade, and there are qualifying exams at the end of 7th and 9th, corresponding to peaks

High Rates of HIV



Source: Michelo, et al 2006

- HIV higher for girls than boys—girls may rely on older partners for resources, potentially as an alternative to seeking education, or to supplement parental support
- Duflo, Dupas & Kremer 2011 show that free school uniforms (lowering the cost of education) decrease pregnancy while HIV program does not—Pregnancy/transactional sex is path of least resistance in absence of better options

Motivation

What kind of interventions can improve these outcomes?

- Cash transfers ease the budget constraint, and may increase schooling, but not clear if this is efficient, or sustainable
- Cognitive skills interventions have been explored extensively by the literature (e.g., Kremer & Miguel, 2004)
- Informational interventions presume there are “true” parameters that girls and parents mis-estimate or don’t know
 - Knowledge of returns to schooling increases demand for schooling for boys in the Dominican Republic (Jensen 2010)
 - Regarding HIV: Knowledge of relative risk of older sex partners decreases pregnancies from older men (Dupas 2011)
 - But in other examples of informational effectiveness, the return is actually being altered (Jensen 2012)
 - And in situations where girls lack agency, information may be insufficient
- Non-cognitive skills present a promising avenue, but have not been tested in developing countries

Heckman, Kautz, and Lerman (2013)

Program	Participant/Evaluation Characteristics						Components					Effects on Outcomes					Return/Benefits			
	Age	Duration	Target	Selection	Follow-Up	Sample	Home	Health	Parental	On Site	Group	IQ	School	Personality	Education	Health	Crime	Earnings	Return	Benefit/Cost
<i>Early</i>																				
NFP	0	2Y	SES	Prgrm	19Y	640	☒	☒	☒	☐	☐	●	●	●	○	●	●	.		2.9
ABC	0	3Y	SES	Refer	30Y	90	☐	☒	☒	☒	☒	●	●	●	○	○	○	●		3.8
IHDP	0	3Y	Health	Prgrm	18Y	640	☒	☒	☒	☒	☒	●	●	●	○	○	○	.		
FDRP	0	5Y	SES	Prgrm	15Y	110	☒	☒	☒	☒	☒	○	●	○	.	.	●	.		
PCDC	1	2Y	SES	Prgrm	15Y	170	☒	☐	☒	☒	☒	○	○	●	.	.	.	.
JSS	1-2	2Y	Health	Prgrm	22Y	160	☒	☒	☒	☐	☐	●	●	○	○	○	.	●		
Perry	3	2Y	SES, IQ	Prgrm	37Y	120	☒	☐	☒	☒	☒	○	●	●	○	○	●	●	8.1-9.2	7.1-12.2
Head Start	3	2Y	SES	Prnt	23Y	4,170	☒	☒	☒	☒	☒	○	○	○	●	●	●	●		
CPC	3-4	2Y	SES	Prnt	25Y	1,290	☐	☒	☒	☒	☒	.	●	●	●	●	●	●	18	10.8
TEEP	3,5	2Y	SES	Prgrm	22Y	260	☐	☒	☒	☒	☐	○	●	●	●	.	.	.		
STAR	5-6	4Y	SES	Prgrm	22Y	11,000	☐	☐	☐	☒	☒	.	○	●	●	.	.	●	6.2	
<i>Elementary</i>																				
LA's Best	5-6	6Y	SES	Schl	12Y	19,320	☐	☒	☒	☒	☒	.	○	.	●	.	○	.		0.9
CSP	5-13	5Y	Behav	Refer	35Y	510	☐	☒	☒	☒	☒	.	.	○	○	○	○	.		
SSDP	6-7	6Y	Crime	Prgrm	21Y	610	☐	☒	☒	☒	☒	.	●	●	●	●	○	○		3.1
<i>Adolescence</i>																				
BBBS	10-16	1Y	SES	Self	1Y	960	☐	☐	☐	☐	☐	.	●	○	.	●	○	.		1.0
IHAD	11-12	7Y	SES	Prgrm	8Y	180	☐	☒	☒	☒	☒	.	.	.	●	.	.	.		
EPIS	13-15	3Y	Schl	Schl	2Y	45,070	☐	☐	☐	☒	☒	.	●	.	.	.	.	.		0.9-3.0
xl club	14	2Y	Schl	Schl	2Y	261,420	☐	☐	☐	☒	☒	.	○	.	.	.	.	.
SAS	14-15	5Y	Schl, SES	Schl	6Y	430	☐	☐	☐	☐	☐	.	○	○	●	.	.	.		
STEP	14-15	2Y	Schl, SES	Self	4Y	4,800	☐	☒	☒	☒	☒	.	○	.	.	.	.	○
QOP	14-15	5Y	Schl	Prgrm	10Y	1,070	☐	☒	☐	☒	☒	.	○	○	○	○	○	○	0.42	
Academies	13-16	4Y	Schl, SES	Self	12Y	1,460	☐	☐	☐	☒	☒	.	○	○	○	○	○	●		
ChalleNGe	16-18	1Y	Dropout	Self	3Y	1,200	☐	☐	☐	☒	☒	.	.	○	●	○	●	●	6.4	2.66
Job Corps	16-24	1Y	SES	Self	9Y	15,300	☐	☒	☐	☒	☒	.	.	.	○	○	○	○		0.22
Year-Up	18-24	1Y	SES	Self	2Y	200	☐	☐	☐	☒	☒	.	.	.	.	.	.	●

Relational skills, taught to adolescents

- Strong evidence that non-cognitive skills may explain significant variation in life outcomes in other settings (Heckman & Rubinstein (2001), Heckman, Stixrud, & Urzua (2006), Heckman and Kautz (2012))
- Most non-cognitive skills evaluations focus on traits like perseverance, self-efficacy, which we know how to measure
- But interventions show most effectiveness in early childhood
- Relational skills are potentially hugely important (biz school) and can be taught to older children (regularly taught to adults!), but little evidence of efficacy
- Moreover, pathways through which non-cognitive traits may improve empirical outcomes still an open question

Goal: to measure impact while disentangling mechanisms

Problem: Many non-cog interventions have kitchen sink approach—non-cognitive skills training are combined with mentorship, nutritional support, and time kept out of trouble

Solution: We separate the communication skills component by comparing to a group that receives the same after-school intervention without skill training

Problem: Useful information (e.g., communicating greater importance of staying in school) that may impact decision-making is often communicated at the same time as skills are taught

Solution: We cross-randomize with an informational intervention that contains information on staying in school and preventing HIV, to explicitly test whether information alone causes outcome changes and whether information enhances non-cognitive skills training

Problem: Often hard to understand the mechanisms by which non cognitive skills can affect outcomes

Solution: We use a specially-designed survey and lab experimental measures to “get inside” one outcome we may affect, parental allocations toward their child

Research questions

1. Can non-cognitive relational skills, isolated from other factors, improve outcomes for adolescent Zambian girls?
 - Decrease HIV risk?
 - Increase schooling attainment?
2. In situations involving multi-party agreement, is information sufficient for behavior change? Does information positively interact with skills to communicate that information?
3. Through what channels can non-cognitive skills impact outcomes? (What is the economic value of communication skills?)

Outline

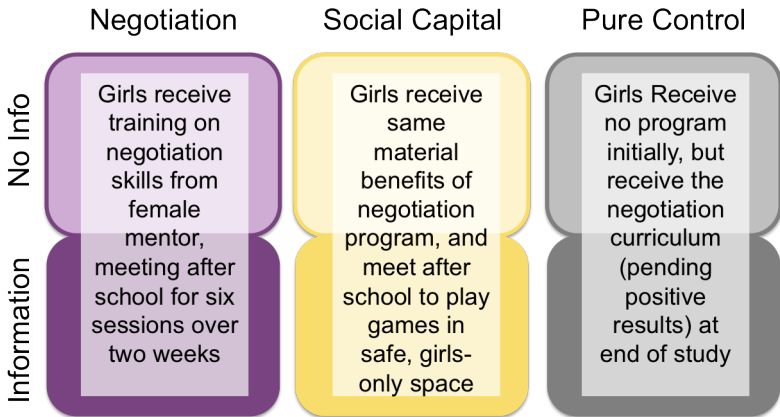
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Design

3,000 8th grade girls in government schools assigned randomly to study arms (at child level)



Setting

- Lusaka, Zambia: Urban area with high poverty and HIV
- Like many developing countries, high (free) primary school attainment, but much less secondary school attainment
- This is especially true for girls (cultural context: most areas in Zambia patrilineal, with bride price at time of marriage)



- “Some parents prefer boys over girls to continue in school.”
- “Parents say that no matter how educated a girl is, she won’t do anything with it.”
- “Parents say girls are weak, because even if they educate them, they will get married and not support the family.”
- “When I passed my exams, there was no money for me, even though there are two boys in my family who also passed and were sent to school.”

Intervention

- Two week, after-school “Me, You, Together, Build” program taught by female Zambian mentors (“coaches”)
- Six sessions teach skills for interacting with others and resolving conflict:
 - Identifying deeper interests underneath demands
 - Understanding and acknowledging the other person’s needs
 - Finding common ground between disparate objectives
 - Recognizing and removing problems blocking agreement
 - Brainstorming creative solutions
 - Building agreements that help both people get what they want
 - Knowing when to walk away when non-harmful agreement is not possible
- Curriculum written specifically for Zambia, based on US high school conflict resolution program and the business school staples “Getting to Yes” and “Getting Past No”



Intervention: Not bargaining

- Speaking out strongly in Zambian society, especially for a girl, is sanctioned: “Maybe she could be possessed by a demon”
- Empowerment programs could be a wrong/dangerous approach
- From focus groups:
 - “I dont have words because we are not supposed to talk back to adults, sometimes you want to insult them, but you can't.”
 - “It can feel like a fist in your chest, when you want to say something and can'tthe bad feelings just stay in you.”



Informational cross-randomization

- **Schooling**
 - Making opportunity transparent: going through job postings from local newspaper, and discussing the salary and level of education required for each
 - Discussing statistics on returns: research on health, family, and career benefits of education from literature
- **HIV**
 - Information on modes of transmission and methods of prevention
 - Relative risk of sexual partners (older men, concurrent partners)



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ASSIST. GENERAL MANAGER

THE LODGE AT SUNSET VILLAS REQUIRES THE SERVICES OF AN EXPERIENCED ASSIST. GENERAL MANAGER TO ASSIST ITS OPERATIONS.

APPLICANTS MUST HAVE AT LEAST 5 YEARS EXPERIENCE WORKING IN THE HOSPITALITY INDUSTRY WITH THE ABILITY TO STEER EXISTING STAFF TO A NEW LEVEL.

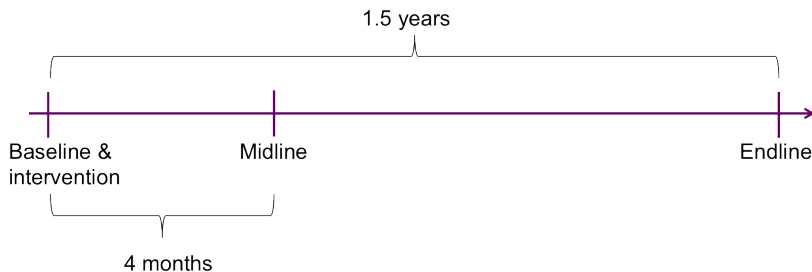
HE/SHE MUST GET FULLY CONVERSANT WITH THE OPERATIONS OF THIS TOP CLASS ESTABLISHMENT. MUST ALSO SPECIALISE IN FOOD & BEVERAGES OPERATIONS

ONLY PERSONS WITH THE RIGHT QUALIFICATIONS SHOULD APPLY TO:

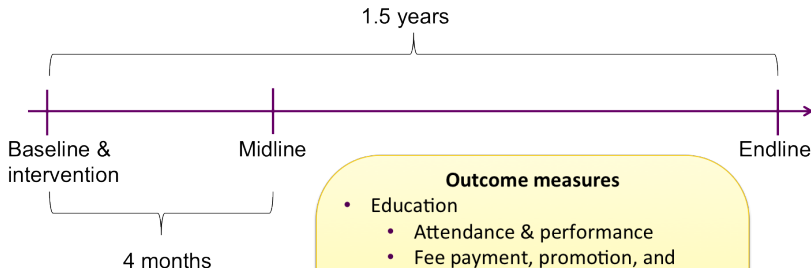
**THE HUMAN RESOURCE MANAGER,
7TH FLOOR, ZIMCO HOUSE, CAIRO RD
LUSAKA**

E16336

Project Timeline



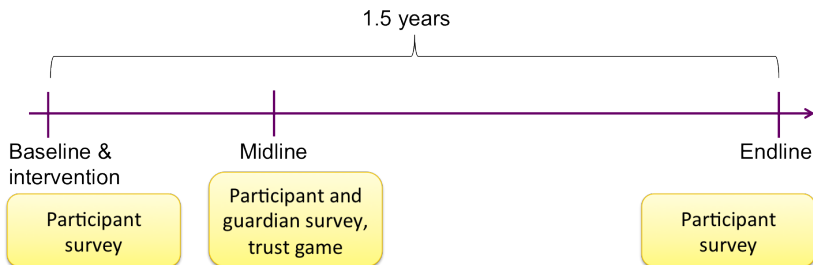
Project Timeline



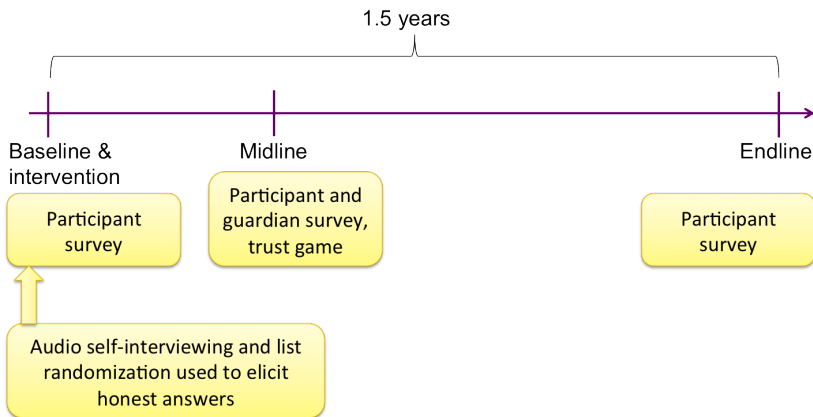
Outcome measures

- Education
 - Attendance & performance
 - Fee payment, promotion, and retention
- Health
 - Pregnancy
 - HIV & STI risk
 - Nutrition and health resources
- Family
 - Improved communication skills
 - Improved relationships
 - Parental ambitions
 - Intra-household allocations

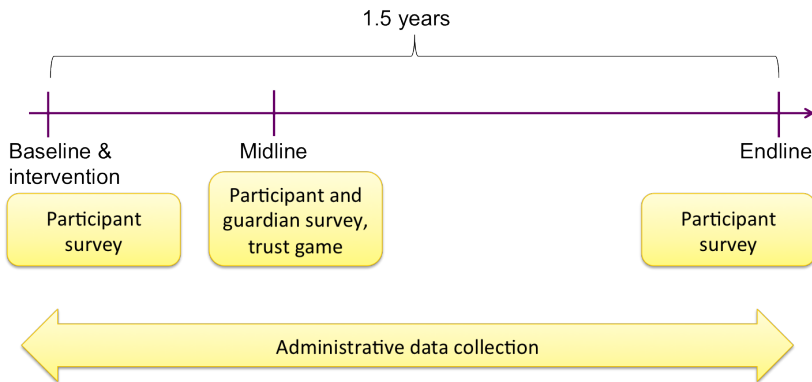
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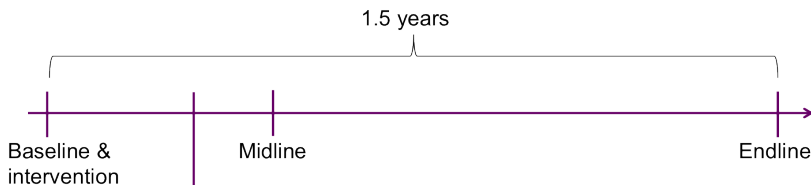
Project Timeline



Project Timeline



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Additional Opportunity

- Subsidized computer classes offered for a fee (about \$3)
- Direct, near-term measure of parent's willingness to pay for educational opportunity for girl
- Proxy for future school fee payment?

Expected Heterogeneity

We expect heterogeneity on some important factors, which will yield insight on pathways:

- Potential U-shape of impact with income: Households with very high income do not face as many constraints, and girl may not have much to gain. Yet households with very low income face binding constraints; non-cognitive skills may not be effective intervention.
- Depends on parental versus child valuations: Dominant narrative is one of children wanting to go to school, and parents not being able to provide resources. But, if child is the shirker, predictions will be entirely different.
- Baseline level of outspokenness of child: Deferential children may upset parents if they speak up, and harmony/mental health in household may go down. Yet defiant children may experience more productive, harmonious interactions.

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- Examples of literature:
 - Banerjee (2004): analyze family decisions as determined by different preferences in combination with credit constraints. Imperfect altruism and incomplete contracts can lead to underinvestment in education
 - Bursztyn and Coffman (2011): experimental study in Brazil—Parents prefer transfers that are conditional upon children attending school (currently in place) to unconditional transfers.

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- In thinking about parent's utility function, several factors should determine optimal investment
 - Degree of altruism
 - Expected total return on investment (to child)
 - Expected reciprocity

Framework

In the spirit of Banerjee (2004) and Barro/Becker intergenerational models

- Let's imagine parents have complete control of the budget.
- Two periods:
 1. At time 1, Parent receives income y , and can divide this income between consumption, c_1^P , retirement savings, r , and investment in their child, i .
 2. At time 2, child gets income λi , which she can divide between her own consumption, c_2^K and a transfer t back to the parent. The parent consumes the transfer and retirement savings (if any).

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$$u^P = u(c_1^P, \beta c_2^P, \theta u^K(c_2^K))$$

- Abstracting away from many things (child's first period consumption, child's utility maximization problem...)

Framework continued

$$u^P = u(c_1^P, \beta c_2^P, \theta u^k(c_2^k))$$

- Define i as investment in children, r as savings toward retirement, and t as transfers back from child to parent.

$$y = c_1^P + i + r$$

$$c_2^P = r + t$$

$$c_2^k = \lambda i - t$$

- Finally, let's define $\gamma = \frac{t}{\lambda i}$

$$u^P = u\left(y - i - r, \beta(r + \gamma \lambda i), \theta u^k((1 - \gamma) \lambda i)\right)$$

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- What could NC skills change? (Probably not β , but can they impact perceived γ through reciprocal exchanges? θ through “bargaining power”? What about λ ?

Modified Trust Game–Field meets lab

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 - Daughters can spend their points at “Chuck E. Cheese” store (decreasing fungibility to parents)
 - Parent chooses points to send under three (random order) scenarios:
 - Dictator game, with points doubled (altruism/bargaining power only)
 - Trust game—points doubled, girl can choose amount to give back (reciprocity)
 - Conditional trust game—Doubling only if girl completes a word search correctly, then girl can give back (expected return on investment)
- We also elicit beliefs about return at each stage, so can measure whether giving changes proportionally to expectation of return

Trust Game–Prizes



Trust Game–Procedure

- Girls and guardians are split into different rooms
- Guardians are given 10 tokens (roughly \$2)
- Guardians choose to invest any number of points in the girl under the three settings (randomly assigned)
- At the same time girl does the word search, if applicable
- Girl is then given points from guardian, and given a small number of points from the researcher, so she does not know exactly how many her guardian gave
- Girl is asked how many points she wants to give back, if applicable. Because of additional researcher points, guardian cannot directly monitor reciprocity or performance on tasks
- Guardian points distributed in airtime, girls redeem points for prizes
- Try to disaggregate whether relative difference in giving between groups comes from λ , γ , or θ

Framework continued: Persuasion?

If one of those parameters— λ , γ , or θ —changes, *why* would it change?
Theories?

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- Literature on persuasion speculates that the ability to persuade could potentially come from credible information, delivered strategically. Recipient knows that they are being manipulated, but still value the information. (e.g., Gentzkow and Kamenica 2011)

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- Here, the child could have little insight into her parent's objective function, and thus believe parental beliefs to be arbitrary
- Negotiation skills may then act not primarily through her ability to talk, but through her ability to *listen*, asking the right questions to find her parent's interests
- Once she understands this, those that are of the hard-working/smart or high reciprocity type can now send a signal they didn't previously realize was valuable

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- Once she understands this, those that are of the hard-working/smart or high reciprocity type can now send a signal they didn't previously realize was valuable
- So parent's utility becomes:

$$u^p = u\left(y - i - r, \beta\left(r + \tilde{\gamma}(s_1)\tilde{\lambda}(s_2)i\right), \theta u^k\left((1 - \tilde{\gamma}(s_1))\tilde{\lambda}(s_2)i\right)\right)$$

Measurement of persuasion mechanism

Heterogeneity re-visited

- Under this hypothesis, impact will depend on true type of child
- Only high-effort, high-ability, or high-reciprocity types would be able to send credible signals
- We will look for this heterogeneity by using pre-intervention measures of test scores and attendance

From girl's side:

- Measure whether girl's empathy behaviors have increased on standard adolescent empathy scale (Davis 1980)
- Measure whether girl has better understanding of how parents make decisions

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Pilot

- This project has been in progress since fall 2010
- Multiple focus groups, pre-tests, and pilots to design the curriculum, field test outcome measures, and calibrate sample size
- Jan-May 2012, ~100 girls at Mahatma Gandhi basic school in Lusaka
 - Two groups: communication skills plus information and information only (had not yet decided to cross-randomize)
 - Baseline survey, intervention, short-term follow-up survey, and additional opportunity done, but no trust game
- May-Dec 2012, ~75 girls at Chazanga basic school
 - Three groups: communication skills, social capital, and control, cross-randomized with information
 - Trust game and additional opportunity outcome measures

Pilot Quantitative Results

- Survey results (significant results—others were positive but not significant due to low sample size)
 - More likely to talk to their parents about being able to spend more time doing homework
 - Report fewer days with not enough to eat
 - More likely to report being in control of their own future (e.g., significant increase in “when I get married” being determined only by themselves)

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- Additional opportunity results
 - Second pilot; 72 girl sample split 50/25/25. Results not significant (0.25 p value)
 - 45.9% of girls in negotiation program took up additional opportunity, versus 35.1% in control groups (slightly higher in SC than pure control)

Pilot Qualitative Results

"I think my relationship with my aunty has improved because I now understand that it is because she wants the best out of me that's why she treats me the way she does sometimes. Before I used to be very rude to her because I thought she mistreated me, but as for this time I give her respect. Before my aunt used to beat me a lot and I always said bad words back to her. I can give an example: its only the other day when I broke a plate, so I waited for her to return so I could explain what happened so that she understands, so after I talked to her and told her that it was an accident, surprisingly she was okay with it. Before I would have hidden the broken plate and she could have beaten me."

Pilot Qualitative Results

From post-intervention focus groups

- Girls in the information treatment tended to report passing the information on to others, versus using it in their own lives
- In contrast, girls in the non-cognitive skills treatment reported making specific plans to improve their lives
- Many of these plans focused on improving their relationships with others and their own behavior
 - “Spending more time on homework, not goofing off after school, completing their chores”
 - “The relationship with my grandmother has changed because I now do a lot of house chores unlike before”
- This may point to girls working toward long-term improvements in relationships, rather than going for a short-term “yes”

Pilot Qualitative Results: Parents

From post-intervention focus groups

- Regarding the additional opportunity, one parent said she used her bus money to pay for the girl to go to the computer lessons, because she knew from the improvements she had seen the child would make good use of the knowledge
- Report changes in child's conscientiousness and level of respect, especially focusing on spending less time with friends and more time on homework, as well as completing house chores without answering back

Trust Game Results

VARIABLES	(1) Average	(2) Automatic	(3) Chores	(4) Math
negotiation	259.4 (517.8)	-254.9 (653.5)	502.2 (619.0)	530.7 (550.9)
Constant	4,913*** (386.7)	5,565*** (488.0)	4,739*** (462.3)	4,435*** (411.4)
Observations	52	52	52	52
R-squared	0.005	0.003	0.013	0.018

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- Results not significant (had attrition due to short time frame of pilot, and need for trust game to take place with both parent and girl at same time)
- But, provide interesting suggestion of channels, which we will have sufficient power to determine in full study

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Summary

- Adolescent girls face challenges in developing countries; non-cognitive skills have not been tested as potential intervention in this setting
- We aim to test both the health/schooling effects of a communication skills intervention and learn about the channels of impact
- Substantial pre-testing and piloting to date, showing efficacy of tools/measurement, and promising preliminary results

Summary

- Adolescent girls face challenges in developing countries; non-cognitive skills have not been tested as potential intervention in this setting
- We aim to test both the health/schooling effects of a communication skills intervention and learn about the channels of impact
- Substantial pre-testing and piloting to date, showing efficacy of tools/measurement, and promising preliminary results
- What's next?
 - Set to launch full study with 3,000 students in April (have secured funding through midline)
 - If results are successful, potential to scale up this intervention through the Zambian Ministry of Education
 - Also potential to follow participants over a longer period of time (although we would like to extend the program to the control group—but intensity/timing would differ)

Questions for Discussion

Questions to you:

- Where do communication skills fit in with the other non-cognitive skills literature?
- What other reasons could there be for impact? What *economic value* could communication skills offer?
- What are your hypotheses about what we'll find?
- Does anything in the design make you doubt the internal validity? External validity?
- What's next for this literature? What are the open questions? What study would you want to design?