

EMPOWERMENT IN LOW-INCOME CONTEXTS

LITERATURE REVIEW



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EMPOWERMENT: WHAT IS IT, AND HOW SHOULD WE MEASURE IT?

empowerment

/ɛm'pʌʊəmə(ə)nt/

Control in one's life in order to achieve valued outcomes or meet one's goals (e.g., success, wellbeing): The key indicators of empowerment (a) believe that change is possible (response efficacy), (b) believe that one can make or contribute to change (self-efficacy), and (c) can identify and seize opportunities to change and overcome obstacles to change (self-regulation).

WHAT IS A COMMON DEFINITION OF EMPOWERMENT?

I find it a very broad concept, seems to have different meanings.

In the context of evaluating different empowerment projects, Carter et al. (2014) looked at what empowerment means, and how it can, and should, be measured. Their definition of empowerment is based on Jo Rowlands' four powers model, which divides empowerment into four separate, but connected, kinds of power. These are 'power-over', meaning the structural power relations in a given society, **'power-to', meaning individual agency, 'power-within', meaning the subjects' psychological strength, and 'power-with', meaning individuals acting collectively.** For women's empowerment projects, which the authors focus on, (but presumably also for other kinds of empowerment projects) they recommend focusing on 'power-within', as this may lead to increases in power-to, and on 'power-with', which may challenge the structural male 'power-over'.

To test how these powers could be measured, they looked at the monitoring and evaluation framework of three projects: the Employment Fund in Nepal, which provides skills development and helps young people get into employment, Samriddhi in Bangladesh, which mainly focuses on income generation, and LOGOS in Kosovo, which deals with **effective and socially inclusive local governance.** They were particularly concerned about donor demands forcing organizations to focus on quantitative measures, as these can more readily reflect the value for money a project creates. The Swiss Agency for Development Cooperation who was funding the three projects, for example, does require projects to use a logical framework (a planning and evaluation tool that shows the causal connection between activities and inputs and their outcome and impact level).

The authors found, however, that such quantitative measures were most likely to measure changes in 'power-to' where people were taught specific skills or knowledge, but are less adequate for less easily quantifiable measures such as 'power-within'. All three projects recognized that and used tools such as interviews, focus group discussions, or case studies to collect additional qualitative data. The authors found that some of the outcomes revealed by these tools which typically would be considered 'soft' data are just the outcomes that the women in the studies mentioned as most valuable (e.g. the feeling of pride about having a new position in society being more important than the actual skill acquisition that led to it). They conclude that giving subjects the opportunity to describe outcomes, rather than measuring these against predetermined indicators, will lead to greater accuracy in outcomes – even if these may come at the expense of lower quantifiability.

Some argue that empowerment is tied up in the interpretation of power itself. Rowlands (1995) believes that power is defined in different ways by different people. One interpretation of power focuses on a group of people getting another group of people to do something against their will. Another interpretation is more neutral, in that it doesn't try to explain how power is actually distributed in society. And finally, her last interpretation is of one group of people stimulating activity in another group of people and raising their morale, hoping to see that group achieve their potential. Rowlands says that the definition of empowerment can then be seen through the lens of the user's interpretation of power.

Rowland's interpretation then leads her to believe that a fundamental way of empowering a community is by allowing people who have not had a say in the decision making process into the decision making process. Not only should individuals be allowed into the decision making process, but they should be able to perceive themselves as entitled to making the decisions that affect themselves. While the theory above guides Rowland's definition, in practice she believes that understanding is a large factor of empowerment. If an individual understands their predicament, they are more likely to do something to change it. In aim of achieving understanding, interventions should focus on a combination of confidence and self-esteem, information, analytical skills, recognition and use of available resources. She believes that empowerment cannot be effective if it is imposed from the outside, which tends to encourage dependency. However, outside support can encourage growth without causing such dependency. Unfortunately, Rowland argues, most agencies trying to empower the disadvantaged are focused on showing results. This leads them to try to find short-term solutions, which tend to favor imposing change without regard to long-term impact on individuals' personal growth.

KOELEN AND LINDSTRÖM (2005) argue that empowerment is largely cultivated through feeling in control of one's life. They discuss two types of empowerment: community empowerment, in which communities of people feel that they can actively try to make progress toward the ends of increasing quality of life, increasing political participation, and social justice; and individual empowerment, in which one feels in control of his/her life, has high self-worth, and feels capable of making a difference.

The authors focus on the latter, and describe the steps to individual empowerment as:

1. gaining a feeling of control over one's life,
2. seeing a connection between one's goals and the effort it will take to achieve them, and;
3. seeing the connection of one's efforts and the results.

Several related factors influence individual empowerment, including locus of control, learned helplessness, self-efficacy, and response efficacy. One has a better chance of feeling empowered if they have an internal locus of control, meaning they feel as though events happen in response to their behavior, as opposed to an external locus of control, in which one believes things happen due to unpredictable outside factors. Self-efficacy (when one feels that they can perform a specific behavior and has a sense of how easy it will be for them to carry out the behavior) and response efficacy (in which one believes that a given behavior will result in the expected outcomes) are also related to a higher sense of empowerment. Learned helplessness, the process by which one essentially learns to stop trying to improve their situation because they feel they have little control, is disempowering.

The authors also suggest a few tactics to increase feelings of empowerment in the context of health. For example, attribution programs, in which people reach a larger goal by setting a series of easier, smaller goals has been successful in health contexts (this is supported by our review on goal-setting). Another recommendation is to educate people on how they can meet the goal they have in mind. While formal classes have been somewhat ineffective in many cases, it might be helpful in the context of Mbrella to send recipients finance tips via SMS. Koelen and Lindström (2005) also state that being on equal footing with a healthcare professional, for example, can increase empowerment in patients. Therefore, the SMS intervention(s) might be especially powerful if we set up a two-way accountability relationship between donor and recipient, as this would frame the two as equals, rather than an agent (the donor) helping a patient (the recipient). However, we should keep in mind that donor goals (e.g., drinking more water) may seem trivial or insulting to the recipient. We should thus try to match the difficulty and seriousness of donor goals as closely as we can with the recipient's goal.

SPREITZER (1995) proposes and validates a conceptual definition of psychological empowerment in an organizational work context. The author sampled two organization's employees and analyzed data using confirmatory factor analysis and structural equations modeling.

The author defines psychological empowerment as a motivational construct manifested in four cognitions: meaning, self-determination, competence, and impact. Meaning is the perceived value of a work goal as judged by the individual. Self-determination is the sense of having choice in initiating and managing actions. Competence, or self-efficacy, is an individual's belief in her ability to perform an activity. Lastly, impact is the degree to which the individual can have influence on outcomes and is the converse of learned helplessness. These four cognitions combine in an additive manner such that any single dimension can add or subtract from one's overall degree of perceived empowerment.

The author posits that there exist four antecedents to one's empowerment. These precursors to empowerment include two personality traits and two contextual variables. The personality traits include self-esteem and locus of control. The work context traits include access to information and rewards. "Information" has two varieties critical for empowerment, including information about an organization's mission and purpose, and information about performance. "Rewards" include a system that recognizes an individual's contribution, though it is not clear whether these rewards must be financial.

The results suggest that each of the four proposed dimensions of empowerment uniquely contribute towards the construct of empowerment. The structural equation model for the antecedents of empowerment indicated a good fit between the proposed model and the data, though locus of control was not found to be significantly related to empowerment. The author concludes however that this might have been due to measurement limitations.

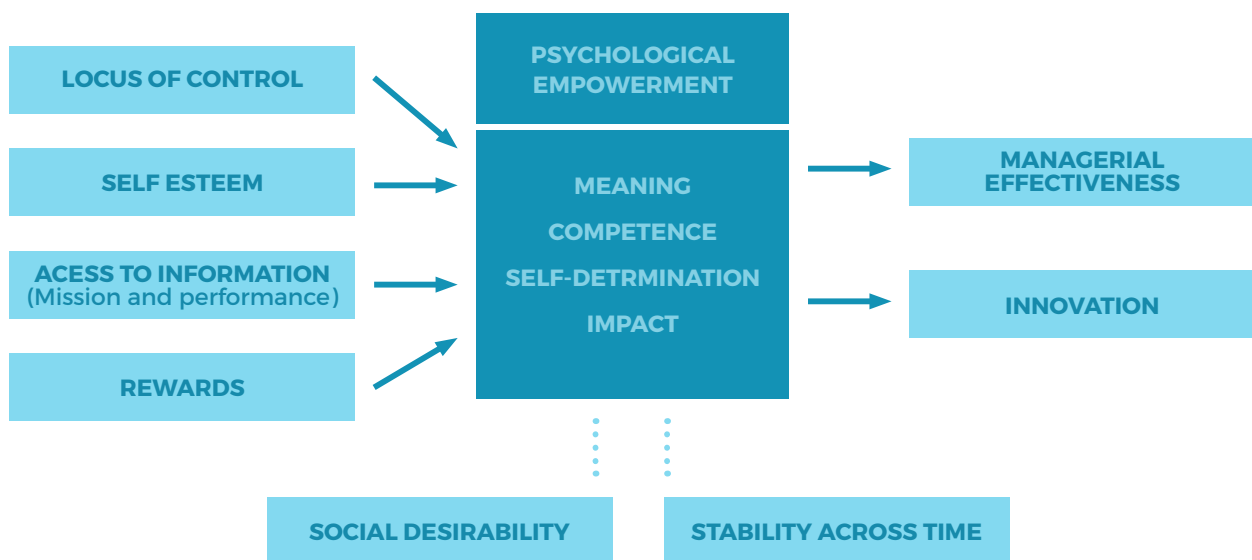


Figure 1. Partial Nomological Network of Psychological Empowerment in the Workplace

HASWELL ET AL. (2010) tested the effectiveness of the Growth Empowerment Measure (GEM) at measuring psychological and social empowerment and found that GEM is a promising measure of empowerment. They discussed various other measurements of empowerment and their disadvantages. The researchers said that most measurements of empowerment are too narrow---focusing on specific contexts such as empowerment for people caring for children with disabilities. The Growth Empowerment Measure was created to track changes in empowerment and evaluate interventions in Aboriginal Australians. The GEM is comprised of an emotional empowerment scale, a set of 12 scenarios, and the Kessler Psychological Distress Scale. The 14-item emotional empowerment scale, titled "How I Feel

“About Myself,” was created to measure the signs of emotional wellbeing and includes Likert scales to indicate how individuals view themselves on a day-to-day basis. One example of a question on the emotional empowerment scale asks respondents to rate their knowledge on a scale of “I feel like I don’t know anything” to “I am knowledgeable about things that are important to me.” The scenarios were developed to measure functional aspects of psychological empowerment such as growth and purpose. For example, in the question “how do you deal with painful feelings and the bad things that have happened in your life?” respondents indicated if they have begun to address their problems, if they have completely worked through their pain, or if they are somewhere in between. The last aspect of the GEM is the Kessler Psychological Distress Scale which is widely used among Aboriginal Australian well-being studies. Haswell et al. added two questions to the Kessler Scale to evaluate happiness and anger.

Haswell et al. used the GEM to measure the empowerment of Aboriginal Australians participating in the Family Well-Being Programme, a program aimed at addressing Aboriginal socioeconomic disadvantages and health inequalities. The Family Well-Being Programme sought to empower indigenous populations by teaching them skills to gain control over their lives. The effectiveness of the Family Well-Being Programme has been documented by several qualitative studies, and Haswell et al.’s findings were consistent with the other studies. They found that the GEM was a robust measure of empowerment with good internal consistency (Cronbach’s alpha > 0.7). As participants gained knowledge, they became more engaged in their communities and felt greater security in their personal lives. The authors concluded that the GEM is a promising measure of empowerment and more work should be done to evaluate the usefulness of GEM on a large scale.

1. How do you deal with painful feelings and the bad things that have happened in your life?

Please tick **ONLY ONE** box below that best describes the way you see your situation.

The diagram shows four boxes representing different levels of emotional processing, connected by arrows and footprints. Each box has a corresponding image and a tick box below it.

- Box 1 (Left):** Image of a person sitting on the ground. Text: "So much pain, anger and bad feelings are **bottled up** inside me. I haven't begun to address this. It **stops me** from moving ahead." Tick box:
- Box 2:** Image of a person standing in a field. Text: "I am **beginning to open up and talk** about myself. I have **started to deal with** the feelings that are bottled up inside me. It's painful, but I **can see the benefits**." Tick box:
- Box 3:** Image of a person walking through a field. Text: "I have been able to **work through some** of my feelings and emotions. I am **beginning to move ahead** in my life. I **still have some ways to go to deal** with what has happened to me and my community." Tick box:
- Box 4 (Right):** Image of a person walking through a field. Text: "I can say that I have **worked through or moved on** from much of the bad experiences and struggles I've had. These **no longer hold me back** from moving ahead with others into a better future." Tick box:

Arrows between boxes are labeled: "Are you partly this & partly that? If so, please tick box".

Figure 2. Scenario Example Question

TENGLAND'S (2008) work on empowerment is dedicated to deciphering what the term "empowerment" refers to in different contexts and how from those analyses a common definition can be crafted. To do this, he manages to separate empowerment into two prongs: the first being empowerment as a goal and the second empowerment as a process. This approach was taken mostly to give an indication of the plausibility of the resulting definition. Using conceptual analysis, he concentrated on what contributed to increases or decreases of empowerment. Namely, the increases he looked at were measures such as abilities and relations which have historically been used to differentiate between those who are empowered and non-empowered. This conceptual approach also helped to define the goals of certain professions, such as teachers, public health workers, doctors, social workers, and priests. In combination with the common practice of language criterion to construct a definition, Tengland uses a variety of criterion measuring uniqueness, value, homogeneity, theory, simplicity, precision, and goals. From these, he acknowledged that there would be incompatibilities, so the definition process would first have to look for commonalities with the term but then refine those using other criteria.

Starting with empowerment as a goal, he recited three common goals usually referenced for empowerment; these are control over one's health, control over one's life, and the ability to change the world. In particular, Tengland saw the third goal as way too broad and found none of the three very plausible. He also addressed how certain authors have referred to knowledge-based goals as a way to empower people. These goals are measures such as skills development and ability as well as self-esteem and freedom to name a few. While he considers these more plausible goals than the preliminary ones, he wanted to see how they interact with the larger goals, and he also strives to see these measures as more of processes or a means to attaining empowerment. His findings of empowerment as a goal that can be acquired are that the approach is plausible but special attention must be given to self-empowerment and empowerment through participation of professionals. Because of this, he suggests that the relational context be looked at to nuance the helper and helped positions. Despite this critique, he acknowledges that the goal approach could also be strongly influential in a means approach to empowerment. In a means-based approach, Tengland calls attention to the fact that all professional and client relationships are not empowering, so the actions of the professionals must be in accord with empowerment goals. For instance, the client must not just be told what to do but have some sort of increased control. Therefore instead of being a paternalistic figure the professional must be a facilitator. These conditions are especially important in contexts such as patient empowerment or educational empowerment as these are authoritative professional figures attempting to empower their clients. This approach also depends on people seizing control when given the chance, but research also supports that as a popular reaction in previous studies.

The resulting definition he constructs considers the goals, means, and relationship aspects of empowerment. He concludes that empowerment results when one group/person acts to support another to attain better control of appropriate determinants of their life through increasing the supported group's knowledge, health or freedom. In this process, the supporting group/person must minimize its power to allow for the supported group/person to have more control which they must then seize. While this definition is tailored towards professional relationships and individuals, Tengland acknowledges that communities also fall under its scope. In addition, Tengland feels as if this definition properly addresses the radical nature of empowerment from a historical context as it includes a power balance but that might not be as applicable to non-political organizations.

ALKIRE ET AL (2013) developed a women’s empowerment measure called the Women’s Empowerment in Agriculture Index (WEAI), and then piloted it in three distinct rural areas to ascertain the effectiveness of the measure, as well as the empowerment of women working in agriculture. The authors created this scale to provide a domain-specific measure of empowerment, since power structures are highly contextual.

The authors divided the scale into 5 components based on previous literature and constraints of their funding by USAID:

1. decisions about agricultural production,
2. access to and decision making power about productive resources,
3. control of use of income,
4. leadership in the community, and;
5. time allocation.

In addition, the index also measures intrahousehold inequality/gender parity, since this is a large determining factor in empowerment (and often disempowerment). Gender parity made up 10% of the weight of the index, while the other 5 factors made up 90% of the weight.

The authors conducted iterative pilots of the index in rural areas of Uganda, Bangladesh, and Guatemala to determine the best inclusions, formulations, and weighting of the index. They found during later iterations of the pilots that the index is able to parse out specific areas where women might be more or less empowered, as well as observe differences in empowerment based on age, income, and other demographic characteristics. For example, they found that in all three pilot areas, women’s empowerment was associated with more decision-making and autonomy regarding religious faith, greater decision-making about family planning, and more autonomy in protection from violence.

The authors note that, while this index is applicable to women working in agriculture, it can be easily modified to include women in rural areas more generally. The index provides a measure that is comparable across sites, and it represents a compromise between the level of detail needed and what is easily and quickly obtainable.

A.

Activity		Did you (singular) participate in [ACTIVITY] in the past 12 months (that is during the last [one/two] cropping seasons)? Yes..... 1 No 2 >> next activity	How much input did you have in making decisions about [ACTIVITY]?	How much input did you have in decisions on the use of income generated from [ACTIVITY]
ActivityCode	Activity Description	G2.01	G2.02	G2.03
A	Food crop farming: crops that are grown primarily for household food consumption			
B	Cash crop farming: crops that are grown primary for sale in the market			
C	Livestock raising			
D	Non-farm economic activities: Small business, self-employment, buy-and-sell			
E	Wage and salary employment: in-kind or monetary work both agriculture and other wage work			
F	Fishing or fishpond culture			
		G2.02/G2.03: Input into decision making No input 1 Input into very few decisions 2 Input into some decisions 3 Input into most decisions 4 Input into all decisions 5 No decision made 6		

B.

Domain	Indicator	Weight
Production	Input in productive decisions	1/10
	Autonomy in production	1/10
Resources	Ownership of assets	1/15
	Purchase, sale, or transfer of assets	1/15
	Access to and decisions about credit	1/15
Income	Control over use of income	1/5
Leadership	Group member	1/10
	Speaking in public	1/10
Time	Workload	1/10
	Leisure	1/10

C.

Table 1
Components of the Empowerment Process Model and Questions for Application at the Person and Program Levels

Component	What individual helpers should assess	What programs should assess
Personally meaningful, power-oriented goals	What kind of power is this person seeking? What makes this goal personally meaningful? How are more short-term goals related to overarching goals?	To what extent do clients tend to have a clear idea of their goals when they request services? What mechanisms do we have to assess how our services might relate to client goals? What is the range of typical client goals? What goals is our program designed to assist with?
Self-efficacy	Does this person believe she or he can reach her or his goal? What factors contribute to this person's sense of self-efficacy, including the history of his or her attempts to reach this goal, and practical considerations?	What mechanisms do we have in place to learn about clients' beliefs and the context of those beliefs?
Knowledge	What does this person know about what is required to reach his or her goal? What can I teach the client about what is needed to reach his or her goals? What can I learn about the client's environment and history that will increase my knowledge about what is needed to reach his or her goals? How do the power dynamics relevant to this goal operate in this person's life?	What do clients need to know, and how can the clients we tend to see best learn? What resources do clients need, and what is their access to those resources? How can we enhance their access to these resources? What mechanisms do we have in place to ensure that we learn about obstacles and opportunities in each client's environment? What mechanisms do we have in place to consider power dynamics related to clients' goals?
Competence	Does this person have the skills to do what is required? Do I understand the history of this person's attempts to gain such skills? Are there obstacles to gaining skills that I can help to address?	What do clients need to be able to do, and how can the clients we see best build these skills? What resources are needed to support their skill building? How can we increase access to these resources? What mechanisms do we have in place to learn about obstacles to and opportunities for skill building in each client's environment?
Action	Is this person taking action to pursue his or her goal? What is the context of any choices this person has made in the actions she or he is taking?	What are the pros and cons of taking action? Are there ways we could shift the balance? What mechanisms do we have in place to assess how pros and cons vary depending on clients' context?
Impact	What happened as a result of this person's action? What factors influenced the impact? How will these events influence this person's continuing iterations through the other components of the process?	What is the impact of actions we encourage, or that clients tend to take? What is the impact on our client, on our program, and on others? What in the environment affects that impact? Are there ways we could influence the response to clients' actions?

Figure 3. (A,B,C): Examples of empowerment indices

EISMAN ET AL. (2016) conducted a longitudinal study which found that psychological empowerment (PE) of middle-school children is a 3 component model, and can predict outcomes associated with youth development. Zimmerman's (1995) model of PE refers to empowerment at the individual level of analysis, however it is influenced by organisational levels and community. The PE framework consists of 3 components: intrapersonal (self-perceptions), interactional (understanding the resources available e.g. adult mentoring) and behavioural (actions taken to influence outcomes).

367 middle-school children in Flint were selected for the study. They completed a baseline survey and were then assigned to a youth empowerment solutions (YES) after-school programme, or the usual after-school programme. The intrapersonal component measured leadership efficacy, civic efficacy and self-esteem. The interactional component included measures for social support from mentoring relationships, adults as community resources, and resource mobilization. The behavioural component included measures for leadership behavior (how often people engaged in behaviour such as being a leader in groups), and 4-item Likert scale tests on community and school engagement. The outcomes measured were aggressive behaviour and prosocial behaviour.

Results support Zimmerman's (1995) model of PE and indicate that although the 3 components (intrapersonal, interactional and behavioural) are related, they are distinct. Results support the use of empowerment focused indicators as a measure of PE amongst specific populations. Contrary to their hypothesis, there was no relationships between PE and aggressive behaviour, however Eisman et al. recommend collectively promoting all 3 components to enhance positive development.

CASH AND FOOD TRANSFERS FOR EMPOWERMENT

HAUSHOFER & SHAPIRO (2016) found that unconditional cash transfers significantly increase food security, consumption, self-employment revenue, and psychological well-being for households in rural Kenya. The researchers conducted a multi-pronged RCT on both the household level and village level. Villages were randomized into an experimental or control condition and households within the experimental villages were randomized into an additional experiment or control. People in the experimental condition received either a lump sum (24,000/-) or monthly installments (2,800/- per month for 9 months) from GiveDirectly on M-Pesa. People in the control conditions were not asked to sign up for M-Pesa and received no money.

Participants in the lump sum and monthly installment conditions experienced significant increases in psychological wellbeing as measured by the CESD scale, Cohen's Stress Scale, questions from the World Values Survey on life satisfaction and happiness, as well as a questionnaire about worries created by the authors. Though

their psychological wellbeing increased, participants experienced no decrease in cortisol levels. Treatment households demonstrated increases in savings and consumption in the forms of food security and food expenditures, but no increases in spending for temptation goods were found. Interestingly, participants in the monthly installment condition experienced greater increases in food security compared to the lump sum group.

BANERJEE ET AL. (2015) found that providing temporary assistance in the form of cash-generating assets, as well as training on several life skills, led to lasting changes in economic status among the very poor (those living on under \$1.25 USD per day) in Ethiopia, Ghana, Honduras, India, Pakistan, and Peru. The intervention lasted about 2 years and varied slightly by location and cultural context. Households first chose which asset they wanted (typically sheep, goats, chicken, or cattle, but they sometimes chose to receive non-farm inventory for trade). The value of this asset ranged from \$437 to \$1,228 per household. Before the household received this asset, however, they were given basic training on how to run a business and how to care for their asset, especially if they had chosen livestock. Treatment households in all countries except Ethiopia and Peru also received a weekly or monthly cash stipend for 4 to 13 months. Participants in Ethiopia and Peru were already receiving support in the form of a food-for-work program already in place, so no additional stipend was offered to them. It is also important to note that control households in these two locations also benefited from the food-for-work program. Field officers visited each household on a regular basis - weekly, bi-weekly, or monthly, depending on how easily accessible each particular village was. The savings component varied widely by country. For instance, Pakistani households saved in groups, while Ghanaian households were given personal savings accounts; and Honduran households were offered financial incentives for saving. Finally, every country except Ethiopia also received health-related training.

Households were randomized into treatment or control individually within villages in India, Ethiopia, and Pakistan. Villages in Ghana, Honduras, and Peru were assigned a condition using cluster randomization. Immediately following the intervention, treatment households had increased their consumption by .12 standard deviations, and their food security by .11 standard deviations, relative to control households. Additionally, household assets increased by .26 standard deviations, and household income increased by .38 standard deviations among treatment households. Treatment households also increased their level of political involvement (not including voting) by .064 standard deviations, and female empowerment increased by .046 standard deviations. Mental health (measured by self-reported happiness and lack of stress) also improved by .1 standard deviations. All but female empowerment remained significantly greater than baseline one year later. These results are perhaps unsurprising given how involved the intervention was. Given the complexity of the intervention, however, the cost per household for 2 years of intervention ranges from \$1,455 in India, to \$5,962 in Pakistan (in 2015 USD).

EMPOWERMENT AND MENTAL HEALTH

In the past few years, a number of chatbots committed to mental health have been developed and are available in the market. At least two of these are available for free or at very low cost via Facebook Messenger: Woebot, and X2AIs 'Tess'. Tess is a mental health chatbot that coaches people through tough times by having text message conversations – in the same way a therapist would. Tess has been and can be used as the primary mode of treatment delivery (mild cases and screening for the general population), as well as in a supplemental capacity in between live, in-person sessions with therapists (clinical support). Depending on the use case, Tess can be customized to specific screenings, specific disorders and can be branded differently depending on the market fit ("Tess" vs "Sara" vs "Karim" or "clinical support" vs "coach"). Tess is HIPAA compliant and is currently connected to workers in the US and the Netherlands, Syrian refugees and now also pregnant mothers in Kenya. PharmAccess is currently conducting a pilot study with Tess in Lagos State. Northwestern University conducted a randomized controlled trial of Tess among students in the United States and revealed that interactions with Tess for 2-4 weeks led to significantly reduced symptoms of depression (by 13%) and anxiety (by 18%), measured by the Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7 resp. Some people would say they would rather text (a mental health chatbot) than a person because they are embarrassed about their anxieties or feelings of depression.

In a study conducted by **FITZPATRICK, DARCY, AND VIERHILE (2017)**, they found that using a conversational agent to text with young adults to deliver Cognitive Based Therapy (CBT) over two weeks was a successful means of administering support. They performed the study by recruiting 70 college students who self-identified as having depression and anxiety. The participants were randomly assigned to message with an online chatbot (named Woebot) or sent to an informational NIMH ebook for college students suffering from depression. The Woebot technology allowed for CBT training for the participant as well as mood tracking.

Communication between the participant and the Woebot often started with general questions such as how the participant was feeling, and then from there, the participant was sent to CBT related links or educational word games about cognitive distortions. Depending on the participants' responses, the chatbot also varied its empathic response and tailored the advice given to the participant. The chatbot inquired about participants' personal goals and provided suggested check-ins so they were accountable for those goals. Gifs and emojis were also sent by the bot every other day to keep the subjects motivated, and participants received feedback on the trajectory of their mood over the week from the bot. For more information about Woebot, visit this link.

Outcome measures for this study were a Patient Health Questionnaire (PHQ) measuring depressive symptoms, a Generalized Anxiety Disorder (GAD) scale which measures self-reported anxiety, the Positive and Negative Affect schedule (PANAS) to measure both positive and negative affect, and the acceptability and usability of the intervention. Analyses showed significant effects for GAD but no such effects were found for PANAS on either the positive or negative side. The largest difference

seen from the PHQ was on motoric symptoms followed by appetite, interest, feeling bad about oneself, concentration, suicidal thoughts, feeling down, sleep, and energy. The participants in the Woebot condition also reported better usability, had higher levels of emotional awareness, and more participants said that they learned something new.

GENICOT AND RAY (2017) propose a theory of social aspirations, income or wealth thresholds that serve as reference points for individuals and which yield additional utility if satisfied. Consistent with other research they claim that the “best” aspirations are those that are large enough to produce sufficient incentivization and motivation, but not so large as to induce frustration. Furthermore, the authors examine the consequences of their theory in the context of larger economic models. In the Solow model, for example, they find that their postulations imply that any steady state must produce bimodal inequality, and that as the proportion of relatively poor incomes decreases the income gap must widen. In a constant elasticity growth model their postulations yield two potential outcomes: 1) when there are initially high levels of equality all aspirations are satisfied and incomes converge to perfect equality and sustained growth; 2) when there are not initially high levels of equality high incomes meet aspirations but low incomes are frustrated, leading to a bimodal, persistent, and increasing inequality.

ANNAN ET AL. (2017) found that a family skills intervention significantly decreased maladaptive behaviors and increased healthy coping skills. Burma (Myanmar) has experienced a lot of turmoil driven by armed conflicts among the government and minorities. As a result, an estimated 2.4 million Burmese migrated to Thailand, only to suffer further abuse and discrimination. Therefore, displaced Burmese migrants are likely to experience extensive distress, emotional instability, and family conflict. To combat this issue, Annan et al. (2017) assigned 479 Burmese migrant children (ages 7-15) and their caregivers into the Happy Families Program, or a control wait-list condition. Most (69%) of the caregivers enrolled in the program were the child’s biological mother, 15% were the child’s biological father, and 16% were other relatives. The Happy Families program was adapted from a US-based program that has previously had success with several different populations in increasing family communication and parent supervision, while decreasing child aggression. In this study, the program consisted of a weekly 2-hour session for 14 weeks in which caregivers learned parenting skills while children learned social skills separately for 1 hour (the specific modules can be found in the table below). During the second hour, children and their caregivers participated in a joint session in which they had the opportunity to experience positive family interaction and playtime.

Session #	Caregiver sessions	Child sessions
1	Introduction	Introduction
2	Child development/expectations managing caregiver stress	Speaking and listening to others
3	Rewarding good behavior	Rewarding good behavior
4	Setting goals with children	Saying “No” to stay out of trouble
5	Noticing and rewarding	Communication for Happy Families
6	Communication for better relationships	Communication to seek help
7	Effects of alcohol and drugs on families	Effects of alcohol, tobacco, and drugs
8	Problem solving	Problem solving
9	Setting limits	Recognizing feelings
10	Solving behavior problems	Dealing with criticism
11	Behavior change plans	Coping with anger
12	Maintaining change	Resources, review, and graduation

Figure 4. Table on caregiver and child session topics in the Happy Families Program

The authors measured children's behavioral and emotional problems (reported by both the child and his/her caregiver) and psychosocial protective factors (like sources of support, social skills, and emotional outlook) before and after the intervention. At the end of the intervention, over 80% of the participants felt 'very satisfied' with the program. The authors conducted an intention-to-treat analysis (ITT). One month after the intervention, children in the treatment condition showed significantly greater improvement in externalizing behavior (i.e., projecting one's own issues onto other people) over the control group according to both caregivers (effect size -0.22), and the children themselves (effect size -0.11). Caregivers, but not their children, also noticed a significant decrease in child attention problems compared to the control group (effect size -0.23). Children, but not their caregivers, perceived an increase in their psychosocial protective factors relative to control (effect size 0.20).

HAUSHOFER & FEHR (2014) concluded that poverty increases stress which then can lead to short-sighted and risk-averse decision making, which creates a feedback loop that perpetuates poverty. After reviewing literature on the topic, the authors found that poverty has a causal effect on risk-averse decision making and time discounting, where low income people forego opportunities for investment that would make them more money in the future in favor of less cash in the moment. Often when it comes to finance, higher risk means higher reward. When people in poverty cannot or will not make risky decisions to increase their wealth, it creates a cycle of poverty that becomes harder and harder to escape. As expected, the authors also found that poverty increases stress and decreases psychological well-being.

GHOSAL ET AL. (2015) found that a training program aimed at improving self-image had significant positive effects on Indian sex workers for a number of psychological measures including feelings of shame, self-worth, and self-efficacy, as well as measures of financial and health future-orientation.

Researchers randomized 66 of 98 observed brothels ($\frac{2}{3}$) into the treatment condition and the other 32 brothels served as a control. In total, the 66 treatment brothels comprised of 264 sex workers, while the control brothels included 203 sex workers. Workers in the treatment condition were invited to take part in 8 weekly sessions, with successive weeks devoted to: reconsideration of past experiences, re-casting of self-image and comparison with members of mainstream society, the importance of saving, violence in daily life, the role of trust, mutual support and organization, consideration of children and their empowerment, and a summary of the key program messages. After each session participants were given Rs. 100, which they could receive in one of 3 ways: as an immediate deposit to their current account with 8% interest, as a contribution to a fixed deposit account with 12% interest, and as a contribution to a fixed deposit account requiring deposit matching by the worker, with a 15% interest rate.

Endline surveys showed that the program had a significant positive effect. Workers in the treatment condition were 40% less likely to have feelings of shame, 68% more likely to have feelings of high self-worth, and 43% more likely to indicate high self-efficacy than the control group. There were no significant differences in levels of aspiration or in decision-making power, though the latter was already quite high (at baseline 93% of workers reported making >50% of decisions on their own). Additionally, after session 3 workers in the treatment group were 25%-51% more likely to choose a future-oriented payment option, depending on the week, and were 9% more likely to indicate a recent visit to a doctor, indicating greater consciousness of future health.

KRAMER ET AL. (2014) found that a web-based chat intervention for depressed adolescents and young adults was effective in reducing depressive symptoms as measured by the Center for Epidemiologic Studies Depression Scale (CES-D), which ranges from 0-60. 263 participants in the Netherlands between the ages of 12 and 24 and with a CES-D score greater than or equal to 22 (considered the cut-off to detect possible depression in adolescents) were randomized into a chat-based intervention group or a waiting list group. Those in the intervention group were given access to PratenOnline, an internet site where they were able to make online chat appointments with trained health care professionals using Solution-Focused Brief Therapy (SFBT), which emphasizes “setting goals, looking for strengths or solutions, keeping the focus on what is going well or better, giving compliments, looking for exceptions to the problem, and asking the client to indicate on scales from 1-10 what progress is made in obtaining goals”. Assessments using the CES-D were taken at baseline, at 9 weeks, and at 4.5 months for both the intervention and waiting list groups, and again at 7.5 months solely for the intervention group, as the waiting list group was given access to the site after the 4.5 month waiting period.

At baseline, there were no statistical differences in CES-D scores between the intervention and waiting list groups (39.5 vs. 39.7). By 9 weeks, there was a significant difference in scores, as the intervention group lowered their average score to 29.2 while the control group lowered to 32.51 (effect size = 0.18). This difference was even larger at 4.5 months, at which point the average intervention group score was 24.86 while the control group score was 33.09 (effect size = 0.79). At 7.5 months, the intervention group had further reduced this figure to 20.31. Additionally, the authors computed the percentage of participants who showed reliable and clinically significant change, defined as a reduction in CES-D score of 5 or greater and a current score under 22; in the intervention group 28.2% of participants underwent this change, compared to 11.4% in the waiting list group. The authors note that the findings are limited due to a high attrition rate, with only 51% of participants completing the questionnaires through 4.5 months.

MILLER & WROSCHE (2007) found that goal recalibration in the face of failures is related to reduced C-reactive protein (CRP), indicating greater overall physical and mental health outcomes. CRP indicates inflammation in one’s system, and is related to an increased risk of diseases like diabetes and heart disease, and often accompanies depression. 90 adolescent females with a family history of depression and/or high cognitive vulnerability were recruited in Vancouver. Participants completed 3 waves of data collection. Participants completed surveys regarding disengagement from goal pursuit (e.g., “It’s easy for me to reduce my effort towards the goal,” and “I seek other meaningful goals”), demographic measures like age and ethnicity, as well as smoking habits and BMI. Participants also completed the Beck Depression Inventory to assess depressive symptoms throughout the study. The researchers also measured inflammation by taking a sample of participants’ blood to measure CRP concentration. Miller & Wrosch found that participants’ CRP rose slightly over 12 months’ time, and that BMI was positively related to CRP concentration. While the CRP of participants whose disengagement was average increased by .13 mg/L over the year, participants who were less skilled at disengagement saw a rise in CRP of .28 mg/L - more than double this rate. Those who were skilled at disengagement, however, actually experienced a decrease in CRP of around .02 over the year. This effect persisted even while controlling for depressive symptoms. Therefore, the ability to disengage from an unreachable goal in favor of a new, more attainable, goal may be beneficial to one’s health.

STRATEGIES TO EMPOWER WOMEN

ASHRAF, KARLAN, AND YIN (2010) found that a commitment savings account led to a long-term increase in female empowerment (in this case, decision-making and purchasing power) in the Philippines.

In a previous study, 1,776 subjects answered a baseline questionnaire and were assigned to one of three treatments:

1. **savings commitment** (called Save, Earn, Enjoy Deposits, or SEED), in which account holders at the Green Bank of Caraga were allowed to open a commitment account which only they had access to – it could not be unlocked until either a specified amount of time had lapsed, or the savings goal was met,
2. **marketing**, in which account holders were exposed to messaging about the importance of saving for a goal, or
3. **control**.

In this paper, the authors conduct follow-up analyses on a survey conducted 1 year later, and on bank data collected 2 years after the initial intervention.

Forty-eight percent of subjects in the SEED condition saved for a celebration (such as Christmas, or a birthday), 21% saved for school fees, and 20% saved for business or home investments. However, the SEED account did not increase total household savings (5,764 vs. 4,363 in marketing and 5,894 in control). The SEED account increased decision-making power (measured using a 9-item scale, with responses ranging from 0-2, where 1 means they decide together, and 2 means they get to decide autonomously about things like family planning, market purchases, schooling, and recreational purchases) of married women by an average of .14 standard deviations, and especially those who were below average in decision-making power at baseline. This also impacted what households spent money on. The households of married women in the SEED condition with below average decision-making power at baseline increased spending on average (1,457 Philippine pesos, ~\$28 USD) on female-oriented products (examples specified by the authors were washing machines, sewing machines, and kitchen appliances).

ARRIVILLAGA, SALCEDO, AND PÉREZ (2014) found that a 15 month economic and treatment empowerment intervention for women with HIV/AIDS living in poverty was successful in increasing knowledge of their condition and its treatment, adherence to this treatment, and general self-efficacy, but had mixed results in promoting the formation of a microenterprise.

48 HIV-positive women living in Cali, Colombia were included in the intervention, of which 79% had a primary school education or less. All participants received the Intervention based on Microfinance, Entrepreneurship, and Adherence (IMEA), with results based on a pre-post research design.

The intervention had 3 components:

1. HIV/AIDS and self-care education for 8 weeks
2. Entrepreneurship education (development of social, decision-making, and problem-solving skills, as well as basic training in management, accounting, and business plan structure) for 16 weeks
3. Microfinance training and implementation (guidance on the development and management of a business initiative and creation of a small social enterprise) for 36 weeks

Pre- and post-intervention surveys evaluated participants' knowledge of HIV (0-26 point scale), knowledge of HIV treatment (0-21 point scale), adherence to treatment (0-63 point scale), and general self-efficacy (0-40 point scale).

Scores increased significantly for all of the surveys, with a 16 point (9 vs. 25) increase in knowledge of HIV, a 14.1 point (5.1 vs. 19.2) increase in knowledge of HIV treatment, a 36 point (16.5 vs. 52.5) increase in treatment adherence, and a 17.5 point (11.3 vs. 28.8) increase in general self-efficacy. Participants had the greatest difficulty in establishing a legally-formed microenterprise, and only 29% were able to form such an enterprise at study end. The authors speculate that this may be due to widespread distrust of banks by participants as well as stigma against HIV-positive applicants by banks.

BRODY ET AL. (2016) conducted a meta-analysis on the impact of women's self-help groups (SHGs) in low-income settings and found significant effects on women's economic, social, political and psychological empowerment.

The researchers performed a systematic review of both quantitative and qualitative studies that examined the effect of SHGs among women. SHGs was defined as, "groups in which female participants physically come together and receive a collective finance and enterprise and/or livelihoods group intervention." The analysis included 23 quantitative and 11 qualitative studies.

The quantitative analysis suggests that SHGs have positive effects on multiple dimensions of women's empowerment, with effect sizes ranging from 0.06-0.41 standard deviations (standardized mean difference, SMD). Impact on social empowerment was found to have the largest positive average effect, particularly on the women's family size decision-making power (SMD=.26). The average effect of SHGs on women's mobility was reported as 0.18 standard deviations (SMD=.18). Impact on political empowerment (i.e., women's ability to participate in decision-making focused on access to resources, rights, and entitlements within community) and economic empowerment (women's ability to access, own, and control resources) were relatively larger (SMD=.19, SMD=.18, respectively). Psychological empowerment (women's ability to make choices and act on them, e.g., self-efficacy or agency, and feelings of autonomy) was not found have been significantly impacted in the quantitative analysis. However, the qualitative analysis suggests that SHGs do, in fact, impact psychological empowerment. For instance, the qualitative findings suggest that SHG members report greater confidence speaking in front of others, sense greater respect from the community, and that the SHGs enabled them to make meaningful decisions and to enact positive change in their lives.

NOREEN (2011) examines the role of microfinance in empowering female decision making at the household level.

For this study, 600 women who were clients between 2002-2007 at either two of the five microfinance institutions in the Bahawalpur region, Pakistan, were chosen at random to complete a questionnaire. The author constructed an index (0-10) of women empowerment in household decision-making consisting of five indicators: decision on child health, education, daily purchases, selection of spouse of children and loan use. The author then regressed the index of women empowerment on age of respondent, education of husband, marital status, number of sons, father inherited assets, and loan amount. Among all respondents, age and loan amount positively impact empowerment in household decision-making. Looking at women who make use of the loan in their own business, number of sons and loan amount positively predict empowerment, whereas for women whose loan is used by their husbands, husbands are the sole decision makers in all domestic decisions. Overall, unmarried women have no power to take basic domestic decision, while widows and divorcees have the most power. The author concludes that microfinance has only a small role in female empowerment.

BALI SWAIN AND WALLENTIN (2007) found that women who participated in microfinance self-help groups (SHG) in India had a significant increase in empowerment. Researchers compared villages from the National Bank for Agriculture and Rural Development's SHG program to a control group. The control group consisted of comparable villages that did not have the SHG program. The microfinance program gave small loans to women and created SHGs in which they learned to effectively manage money and created a sense of community for the women within the self help groups.

The researchers were very specific in their definition and measurement of empowerment, saying that many studies examine effects that increase the well-being of women, but not their empowerment. Bali Swain and Wallentin used Kabeer's (1999) definition of empowerment as "the process in which women challenge the existing norms and culture of the society in which they live to effectively improve their well-being." Examples of empowerment given by the researchers include "increased participation in decision-making within the household to issues that were usually considered outside the domain of woman" and "feeling fearless, open and confident." Their survey contained indices measuring verbal, physical, and emotional abuse, political involvement, and decision-making ability. Researchers measured the women's empowerment in 2000 and 2003 and analyzed their change in empowerment over time. They found that women in the SHGs experienced significant increases in empowerment whereas women in the control did not, but both groups saw a decreased variance in empowerment scores. There was a significant decrease in variance for SHG groups, and an insignificant decrease for control groups. The authors said that there is less disparity of empowerment between women in SHG, probably because the women with less empowerment before SHG gained a lot more empowerment than those who already had higher empowerment. Therefore, the scores of the people with the lowest empowerment converged on the scores of the more empowered.

Bali Swain and Wallentin claimed that microfinance increases women's empowerment by creating a support structure for women and providing training. The researchers found that empowerment increases for women in the SHG program, but they didn't examine which aspects of the National Bank for Agriculture and Rural Development's SHG program specifically contributed to their empowerment.

An experiment conducted by **LYBBERT AND WYDICK (2017)** found that in Oaxaca, Mexico an intervention targeting three components of hope (goals, agency, and pathways (i.e., plans for meeting goals)) among indigenous women contributed to a significant increase in aspirations.

The researchers used a microfinance lender to conduct a randomized control trial where they assigned participants to one of two community banks. The treatment group was shown a documentary about women in Oaxaca who had experienced a positive change from microloans. In addition, they were given a refrigerator magnet with a space to write a goal related to their enterprise, weekly savings, and the long-term. The last manipulation was that these women participated in a 4-week “hope curriculum” which taught them the aforementioned elements of hope.

Results showed that the treatment group experienced a significant impact on aspirations (index increased by 0.24 of a standard deviation) and a smaller, not-significant impact on agency (point estimate increase of 0.054 and 0.036 of a standard deviation). As for the other outcome variables, happiness and optimism did not have significant results nor risk-aversion reduction, but future orientation increased by 0.13 of a standard deviation (significant at the 10% level). From these individual measures, the experimenters also crafted a Hope-7 (aspirations, agency, avenues, happiness, optimism, future orientation, and risk aversion reduction) and Hope-3 scale (aspirations, agency, avenues). The Hope-7 scale saw a significant increase by 0.17 of a standard deviation while the Hope-3 scale improved by 0.13 of a standard deviation. These indexes were influenced mainly by the large increase in aspirations as well as the culmination of the positive point estimates. However, there were not any significant effects on how dedicated women were to their business (log sales, log profits, log community bank savings, etc). After these four weeks, the hope intervention continued to practice goal setting and self esteem for another 12 months which the authors hope to analyze later.

From these results, the researchers noted the need to differentiate optimism from aspirations as aspirations encompasses a much wider set of ideas including agency and self-efficacy. They considered how internal (i.e. learned helplessness) and external constraints (i.e. access to resources) interact and assert that they work together but cannot be deemed substitutes.

BANDIERA ET AL. (2017) found that a multi-approach intervention designed to help adolescent girls acquire both economic independence and control over their bodies increased the proportion of women in income generating activities, lowered teen pregnancy, and led to less early marriages in a four year period.

The intervention combined vocational and life skills into one program for adolescent girls in Uganda. To do this, they used the Empowerment and Livelihood for Adolescents (ELA) program which had seen success in Bangladesh. An NGO, the Bangladesh Rural Advancement Committee (BRAC), was responsible for helping implement the program by providing the clubs the girls attended in the afternoon. Ten BRAC branches were selected, and of 15 eligible communities in each branch, 10 communities were randomly assigned to receive treatment and the other 5 were used as controls (50 control, 100 treatment groups). The clubs used community women slightly older than the girls as mentors; they taught the younger women about topics such as financial literacy, budgeting, and entrepreneurial skills in the vocational training segment, and for life skills, they learned about sexual health, family planning, negotiation, and women-specific legal issues (e.g. bride price, violence). These courses were taught for the first two years of the intervention, and

for the latter two years, the clubs were meant to serve as a “safe-space” for the young women. Participation was around 85% for life skills training and 53% for vocational training with 51% completing both at midline.

Vocational program results showed that labor force participation increased 66% over the baseline mean at midline and was 49% higher at endline. Most of those results were from increased self-employment which was doubled at midline and had increased 50% over control communities at endline. Life skills results showed a decrease in fertility rates of 24% over two years and that girls were also 58% less likely to enter into an early marriage or cohabitation at midline. Another find was that the proportion of girls having non consensual sex drops by almost 30% from baseline to endline. The girls in the treatment group also reported wanting to marry and have children at older ages. However, the researchers did not find significant aggregate gender empowerment index differences between treatment and control communities by endline despite having significant differences at midline.

From this, the researchers gathered that given the cost per girl (\$17.9 in 2008 US Dollars), the program brings in \$50 per girl estimated from a rough monetary estimate using annual income via an ITT (intent-to-treat) OLS ANCOVA regression analysis. This suggests that the program might be sustainable in other countries. They focus on how this program provided evidence to support the notion that introducing these concepts to girls at a critical period in their lives before they have made some of these decisions is an effective strategy, especially when efforts to increase their human capital are also made. In addition, they outline how these results are more robust than those found by single intervention techniques.

MACPHAIL ET AL. (2013) found that conditional cash transfers (CCTs) based on female school attendance were both feasible and acceptable in rural South Africa. Previous studies have shown that increased school attendance by women leads to decreased risk of HIV infection, but poverty remains a major barrier to completing school.

A random sample of 60 households with a young woman attending grade 10 and aged 14-17 were selected. Households had to be classified as vulnerable i.e. in the bottom 2 wealth quintiles, single parent household or reporting food insecurity. Only 29 households (15 intervention, 14 control) were recruited to the study due to incorrect information about the school grade. Women were assigned to the control or intervention arm and monitored for two months. In the intervention, attendance of at least 80% led to a monthly payment of \$35, which is comparable to a South African child support grant. FGDs were conducted with the participants, teachers and young men, and semi-structured exit interviews were completed by participants and parents. In-depth interviews were conducted with 20 participants and 20 parents. The researchers measured attendance, but since this pilot intervention was conducted during exam time, the only discernible effect was that it made attendance easier, due to an increased ability to purchase uniforms and other school supplies.

All but one young woman had positive responses for the CCTs, but women indicated that they thought all women should receive the money and that young men should be included too, otherwise social relations between those in the intervention and control groups may be adversely affected. Caregivers had positive opinions of the intervention and said the money paid for expenses needed for school attendance and discouraged young women from having relationships with men for money.

Young men said they needed money too and hence should be included in the study. Rumours about researchers pre-selecting the intervention group due to HIV positive status were spread by girls in the control group and boys. One third of the grant money went directly to the girls while the other two thirds went to caregivers, there were differing opinions about the amount the young women should receive but there was general agreement that the young women should get a portion of the grant. Concerns that the girls would spend money on alcohol or drugs proved to be unfounded, as girls spent the money on clothing, school uniforms, toiletries and household items whilst caregivers spent the money on household items, uniforms and rent. The pilot highlighted the need to explain participant selection more thoroughly for the RCT and the difficulties faced when selecting households for CCTs in poverty stricken areas.

NANDA ET AL. (2017) pilot-tested a program in Delhi, India designed to promote female empowerment and employability, and found that it was effective in increasing self-efficacy, attitudes toward gender equality, confidence, and improving peer interactions. The Planning Ahead for Girls' Empowerment and Employability (PAGE) program took place from 2014-2015 in 7 schools (4 treatment and 3 control), starting with a sample of 4,100 girls aged 15-17. Students in the treatment condition participated in a 4-part curriculum focused on the areas of self (gender as a construct, patriarchy, body image, and how these things affect their daily lives), efficacy (communication, problem-solving, goal-setting, and leadership skills), resourcefulness (financial skills, how to deal with sexism in the workplace, how to apply for jobs, and how to navigate a work environment), and employability (exploring the skills they already possess, and the types of careers they might enjoy). The teachers in intervention schools also participated in an empowerment program in which they could team up to improve their schools, classrooms, or the PAGE program in general. In addition, the girls had the opportunity to participate in career events in which employers visited the school to teach the girls about potential job opportunities. Students took a survey including questions about SES, education level, school/learning environment, social support, financial literacy, resource planning, and reports of discrimination or abuse both before and after the intervention. Additionally, the researchers collected qualitative data from teachers, parents, community members, and the girls themselves, through focus groups and IDIs.

The sampling method was less than perfect, as the researchers were unable to select schools at random. The selected schools couldn't be so close together that an intervention at one school could affect the lack of intervention at a neighboring school, for example. In addition, roughly 40% of the girls had dropped out of school by the end of the intervention when they scored too low on qualifying exams to advance to the next grade (these exams are only introduced starting at the end of grade 9), bringing the final sample down to 2,318. Therefore, the researchers were forced to perform cross-sectional analyses, measuring one group of girls at baseline, and another post-intervention. Despite these methodological issues, the researchers concluded that this pilot intervention was generally successful. The proportion of girls in treatment schools who said that they should have some say in whether and when they get married increased by 12% (82.5% at baseline vs. 94.9% post-intervention), whereas in control schools, there was not a significant increase (87.2% at baseline vs. 93.4% post-intervention). Self-efficacy (24.6% increase over baseline vs. 26.3%), attitudes toward gender equality (21.4% increase over baseline vs. 22.8%), and perceived discrimination (12.6% increase over baseline vs. 13.4% - thought to reflect greater awareness of discrimination, not an actual increase in discrimination) also significantly increased in the intervention group, though the authors do not include the mean scores at either baseline or endline. Self-efficacy, gender equality

scores, perceived discrimination, and employability were said to have increased more for older girls than younger girls, but no solid numbers are given to support this. Peer interactions were more pleasant for girls attending intervention schools (90% answered affirmatively to “I like school because my peers accept me;” 68% answered affirmatively to “I like to go to school because I have a good group of friends.”) compared to girls attending control schools (82%; 47%). Qualitative results revealed that the girls who attended treatment schools felt more confident in their decision-making abilities, and were more comfortable standing up for themselves.

YOUTH EMPOWERMENT

RILEY (2018) found that showing secondary school students an inspirational role model through a movie (*Queen of Katwe*) made them perform better on a math exam a week later when compared to students who watched a non-inspiring movie. Students were driven to the theater, and randomly assigned to a condition once they arrived. 794 students in the treatment condition watched *Queen of Katwe*, an inspirational true story about a girl from a Ugandan slum who persevered through many difficult obstacles and, against all odds, became a chess master. 706 students assigned to the control group watched *Miss Peregrine’s Home for Peculiar Children*, a fantasy film featuring children with paranormal abilities. The only information recorded from the students was their name, age, gender, class (year 6 or year 4 of secondary education), school, and test results from a mock national exam administered before the experiment.

S4 students took the Uganda Certificate of Education (UCE) exam, while S6 students took the Uganda Advanced Certificate of Education exam (UACE). Both exams include a variety of subjects, such as English, Math, Biology, Chemistry, and History. Overall, the students who watched *Queen of Katwe* were 11% more likely to pass the math portion of the exam relative to the control group (84% vs. 73%). The treatment increased math scores by 0.11 standard deviations for students at the S4 level. At the S6 level, student exam scores were .13 standard deviations higher among those who watched *Queen of Katwe* compared to those who watched the placebo movie. S6 students in the treatment condition were also marginally (6%) more likely to be accepted into a university than S6 students in the control condition. Given that the protagonist of the treatment film was female, female students benefited more from this treatment than male students. S4 girls scored .17 standard deviations higher on the math portion of the exam when they watched the treatment film compared to those who watched the control film, and S6 girls experienced a similar increase. Additionally, S4 students who had previously scored below the median on their mock exams experienced a substantial jump in math scores - scoring .26 standard deviations higher after watching the treatment film. Overall, it seems that being exposed to a positive role model (especially one who is similar to them) may actually be able to help students achieve exam scores and increase their chances of being accepted into university.



WHAT EFFECT WOULD VIEWING AN INSPIRATIONAL FILM HAVE ON SECONDARY SCHOOL STUDENTS IN UGANDA?

CONTROL

 706 STUDENTS

FILM:
Miss Peregrine's Home for Peculiar Children

TREATMENT

 794 STUDENTS

FILM:
Queen of Katwe

RESULTS

CONTROL TREATMENT more likely to pass the math portion of the exam

73% vs. 84%

THE TREATMENT GROUP IMPROVED IN:

- » For S4 students: 0.11 σ increased math scores
- » For S6 students: 0.13 σ increased exam scores
- » For S6 students, 6% more likely to be accepted into university
- » Overall GIRLS: 0.17 σ increased math scores
- » S4 students with below median scores, had higher math scores by 0.26 σ

LAKIN AND MAHONEY (2006) found that participation in a community service program increased intent to be involved in future community service as well as empathy in 6th-graders. The researchers conducted their experiment at an urban middle school, where they implemented a community service program as part of the 6th grade curriculum. At the beginning of the school year, they divided students by classroom into getting community service activities or not. The community service curriculum involved designed to foster empowerment and a sense of community. These sessions were in three phases, skill-building, planning, and action. The skill-building phase explored the concepts of social action, cooperation, leadership, and empathy. During the planning phase, participants chose a social problem or need they wished to address, researched the issue, and developed a plan of action. And the action phase is where the participants carried out their researched service activity. The researchers found that those who went through the service program had significantly higher intent for involvement in future community service, as well as empathy. They also found no significant difference between groups in terms of civic responsibility or self-efficacy.

SEKEI, LUGOE, AND THULSTRUP (2016) found that an 'edutainment' program in Tanzania focused on young entrepreneurs effectively promoted interest and engagement in entrepreneurship and farming in young viewers aged 15-30. The authors state that the treatment group showed improvement in these areas compared to the control group, though they do not provide statistics to support this claim. The researchers conducted an RCT, as well as focus group discussions (FGDs) to assess the effect of the TV show Ruka Juu ("jump up" in Swahili) on Tanzanian youth business/farming income. The show ran for 11 episodes during March-May 2011, and featured 6 young people (3 men, 3 women) who were competing for a prize of TZS 5 million (3,100 USD) to invest in their business. Contestants completed several challenges designed to make them (and the viewers) think about how to successfully plan and operate a business. There was also some focus on gender issues and female empowerment.

Participants in the RCT were given TZS 5,000 (3 USD) at the start, and were randomly assigned to watch Ruka Juu, or the weekend movie (a different movie aired each week). The weekend movie was chosen as a control because a) it aired at the same time as Ruka Juu, and b) it was unlikely to have anything to do with entrepreneurship. Participants were students in their final year of secondary school in Dar es Salaam, Tanzania, and baseline surveys indicated no significant

differences between the two groups in terms of gender, SES, etc. Their teachers were also incentivized to remind the students to watch the show. Students also completed a midterm quiz after 5 of the 11 episodes aired. After the season finale, 1,927 of the 2,126 students participated in a half-day workshop in which they completed questionnaires and participated in activities assessing their viewership, entrepreneurship knowledge, and mindset (future aspirations, willingness to compete/take risks, interest in taking an entrepreneurship class). The researchers also conducted FGDs with students at other secondary schools, as well as out-of-school youth in Morogoro, Tanzania. These participants were less likely to own a TV, but they often knew people who had access, and were reminded via SMS to watch Ruka Juu every week.

The results of the RCT showed that female students in both the RCT and FGDs watched the show more often, and females in the RCT recalled more about it than males or the control group. Female students were also more interested in learning more about entrepreneurship and finance. However, male students seemed to learn more from the show than females. The FGDs revealed that youth were inspired by both male and female contestants on Ruka Juu, because the show made starting a business seem like a more attainable goal. One person even stated that they had started a successful movie rental shop as a result of watching the show. Some were unable to watch the show every week due to issues like power outages, or older family members wanting to watch something else. Interestingly, none of the out-of-school females watched the show at all. They reported either not having a TV and/or that the show was at an inconvenient time, since the show aired in the evening, when they were often expected to cook/clean. FGD participants stated that it might be easier to listen to the show using their mobile phones than to watch it on TV, so a radio version of the show was created for season 2.

SEKEI ET AL. (2016) conducted a pilot for season 2 of Ruka Juu in which communities watched or listened to 2 episodes of the program together. The results were promising, but as they were only able to collect data from 20-30 of the 500 attendees, the researchers do not discuss these results in detail. However, they do state that the TV show was more effective than the radio version of the show in piquing young people's interest in entrepreneurship. The researchers also facilitated the formation of a youth agriculture club. As a result, some of the participants started the "Mang'ula Youth Farmers Association" in an attempt to increase the availability of training and support for agriculture - it started with 20 members, and had grown to 72 members a year later.

OZER AND DOUGLAS (2013) found one way to encourage positive youth development in a community--through use of a Youth-Led Participatory Action Research (YPAR). These researchers in California tested the effectiveness of YPAR by implementing it as an elective class in local high schools, randomly assigning classes to either YPAR or control. 167 students were assigned to the experimental condition and 206 students were assigned to the control condition, sampled from 61 different classes across five high schools. All students, regardless of treatment group, participated in a six week curriculum that emphasized key aspects of psychological empowerment including effective communication skills and team building. After the six weeks, students in the YPAR program were able to decide which community issues they want to solve, conduct research on those issues, and brainstorm feasible solutions to those issues. Students in the control group continued the curriculum throughout the remainder of the semester without implementing any youth research.

At the beginning of the semester, researchers conducted a survey of the students that measured four different aspects of self-esteem and psychological empowerment using Likert scales. The four aspects are socio-political skills, motivation to influence the community, participatory behavior, and perceived control. At the end of the semester, researchers conducted focus groups with the YPAR classes to see how the YPAR program impacted students' psychological empowerment and self-esteem. Students who participated in YPAR experienced significant increases in motivation to influence communities as well as in socio-political skills (i.e., understanding of political issues, how to research those issues, and how to effectively communicate with others to improve them). However, they did not find a significant difference between groups for political participatory behavior or perceived control in the community (Ozer and Douglas, 2013).

WYDICK, GLEWWE, AND RUTLEDGE (2013) looked at how the work done by Compassion International, a child sponsorship organization, has affected the lives of 10,144 children in the developing countries of Bolivia, Guatemala, India, Kenya, and Uganda in a two year timespan. They found that the sponsorship program helps both education and attendance rates; secondary school completion had a large increase (12-18 percentage points) over baseline and particularly strong impacts were found for the African countries. In addition, the effects seemed to carry over into later years as participants partnered with Compassion sponsorship were more likely to have employment as an adult and work in white collar jobs.

The Compassion scholarship program provided children with student centers where they engaged with programs that gave them nutritional, health, academic, and spiritual support. The categories the children rated as most beneficial were educational and spiritual support. In addition, the children were able to write to their sponsors, and sponsors were sent were updated in their child's progress. The children selected for the program were ones who came from low-income families and were considered the neediest in walking distance from the project. The data collected for the study came from projects in the six different countries which ranged in size in their first year (100 to around 20-30 children). In addition to the Compassion participants, they also surveyed people who were in the same area but not involved with the Compassion scholarship program.

GLEWWE, ROSS, & WYDICK (2017) found that international sponsorship has significant effects on the happiness, hope, and self-efficacy of children from low-income backgrounds. The researchers analyzed the effectiveness of Compassion International's intervention in Indonesia by analyzing drawings of children as well as asking the children questions about their living conditions, self-esteem, and hopefulness. Compassion International provided monthly cash transfers to the children, as well as healthcare, school tuition, and healthy meals. For about 8 hours a week for 10 years, children participated in a number of programs intended to "release children from spiritual, economic, social, and physical poverty." Researchers analyzed the effects of this program on 526 Indonesian children. To do so, researchers asked the children to draw a picture of themselves in the rain. According to the researchers, if the children drew themselves under an umbrella or a roof, sheltered from the rain, they have greater hope, self-efficacy, and happiness. The researchers found that children who partook in Compassion International's program scored significantly higher in happiness (0.22σ), self-efficacy (0.23σ), and hopefulness (0.44σ) than children who did not participate in the program.

Using OLS, the researchers analyzed the clusters to find that sponsorship led to an increase in years of schooling by 1.03-1.46 past baseline and increases the probability that the children will complete primary school by 4-7.7% (11.6-16.5% for

secondary school and 2.1-2.4% for university). The researchers also observed that the probability of adult employment rose 5.1-6.3% and the probability of white collar employment by 6.5-6.7%. In follow up studies, these authors investigate how aspirations and self esteem might be responsible for these impacts compared to other programs.

GEENAN ET. AL (2015) analyzed the effect of Better Futures, an intervention design inspired by My Life (a program that coaches foster care children on self-determination and uses shared mentorship workshops), on postsecondary education and professional outcomes for foster care students with mental health problems. Participants include 67 foster care students who both identify as having mental health challenges and are on track to finish high school or attain their GED or other high school equivalent within 2 years of the study. These students are randomly placed into either a control or treatment group. Ensuing this separation, data is collected on variables of interest and mean scores for each variable are tracked over time using surveys given at critical points in the program. The first administered survey is the baseline given at the beginning of the program. The second response is recorded one month into the program immediately following completion of the Summer Institute which is the first step in the treatment. The Summer Institute consists of the students living in the same dorm area, attending school tours and information sessions, and participating in evening social gatherings. As a secondary step, the treatment group undergoes a multipart intervention which includes peer coaching on experiential activities and self-determination skills (11 each) and a combination of at least four of five mentoring workshops with discussions about educational and professional development. These one-on-one peer coaching sessions endure 9 months and occur twice a month for students. At their conclusion, the third survey is administered and results are collected. The last survey is given 6 months following this procedure at the 16 month mark.

Results from the study indicate that between the control and treatment groups there were significant differences pertaining to the categories of self-determination, mental health, hopelessness, post secondary preparation, and transition planning. In addition, they suggest that these sort of interventionist strategies could lead to positive trajectories concerning high school completion, quality of life, and mental health recovery. Notably, the treatment group participated in twice as much postsecondary education compared to the control group (65% vs. 24%, respectively; for seniors, these numbers were 72.7% and 35.7%). While this study particularly concerns students from foster homes who deal with mental health concerns, some of its findings concerning student resources and support can be widely applicable and marginalized groups can benefit from the results regarding mental health.

JOHNSON ET AL. (2000) find that the positive effects of a child development program in disadvantaged areas persist seven years later. The program, first launched as an RCT in Ireland in 1990, connected volunteer mothers with first-time parents to provide support and encouragement during the first year of child rearing. At age one, children in the intervention group scored better in terms of immunization, cognitive stimulation and nutrition, and mothers in the intervention scored better in nutrition and morale than those in the control group. The follow-up evaluation, seven years later, shows sustained beneficial effects on parenting skills, children's engagement in school, and that the effect extends to subsequent children.

The program identified potential volunteer mothers by the local public nurse. Willing volunteers were then trained by a family development nurse. Each volunteer supported 5-15 first-time mothers, whom she visited once per month [presumably for a year]. The program focused on health care, nutritional improvement, and overall child development issues by developing parenting skills and building self-esteem in the first-time mothers. Of the 232 mothers in the original trial, 77 were traced seven years later (38 intervention and 39 control).

The researchers found that superior parenting skills and cognitive stimulation of children in the intervention group persisted seven years later. In the original evaluation, mothers in the intervention group were more likely to read to their children daily, to play cognitive games and read nursery rhymes. In the follow-up evaluation, the same group of moms were more likely to check homework every night compared to control (100% vs 82%, respectively), and intervention children were more likely than control to visit the library on a weekly basis (89% vs. 50%). The intervention also had spillover impact on mothers with subsequent children. Intervention mothers were more likely to report having learnt something during their oldest child's first year (e.g., "how to respond to child's behavior") that helped with subsequent children compared to control parents (82% vs. 57%, respectively). This might suggest that the intervention increased mothers' ability to learn useful practices on their own, which could lead to compounded beneficial effects.

SSEWAMALA ET AL (2010) found that an economic empowerment program significantly changed attitudes towards future saving, as well as sexual risk-taking behavior, with males in particular becoming more risk-averse in their sexual behavior.

The authors recruited 286 AIDS-orphaned youth (average age 13.7 years) from 15 primary schools in Uganda to participate in the study. The schools shared similar socioeconomic characteristics, including overall performance on standardized national exams. Each of the schools was randomly assigned to either the experimental or control condition, with all students in the school receiving the same condition. Individuals assigned to the control condition received counseling and educational supplies, as well as health education. Individuals in the experimental condition also received these factors, but in addition also received an economic empowerment intervention consisting of three components: (1) twelve 1-2 hour workshops over a 10-month period focused on asset building and financial planning, (2) a monthly mentorship program for adolescents with peer mentors, and (3) a matched Child Savings Account (CSA), dedicated to paying for postprimary schooling. This program was based on asset theory, which posits that when people accrue assets such as education or businesses, their behavior, attitudes, and hopes for the future improve. In addition, asset accumulation can create "asset effects," where more assets in the present influence expectations for more resources in the future, and also create greater social trust and less myopia.

The authors found no differences in savings amounts in the CSAs between the study conditions. However, they found that attitudes toward sexual risk-taking behavior improved for male participants in the experimental group compared with the control group. Females also had improved attitudes, though this was less significant. The authors suggested a gender-specific component be explored and added to the intervention to further improve the outcomes of females when utilizing this type of intervention.

MORTON AND MONTGOMERY (2012) show that a youth empowerment program with out-of-school youth in Jordan did not have an overall impact on youth

development outcomes, but reduced conduct problems. This impact was greater in younger youths compared to older youths.

Questscope non-formal education is a partnership between an NGO and the Jordan Ministry of Education. The empowerment education program is a two-year group-based program for out-of-school youth that consists of social and educational activities. The program takes place for 2-3-hour participatory sessions five times per week. Each session includes dialog-based learning activities, vocational activities and places emphasis on youth participation in decision making and asset-building activities. Upon graduation, students receive a 10th grade alternative certificate. For this study, the authors recruited 127 out-of-school youths (13-21 years of age) who were randomly assigned to either the empowerment-based non-formal education program at one of six sites or to a four-month waitlist comparison. Youth in the comparison group were offered bi-weekly recreational club activities (sports, games, group meals) that were facilitated by a Questscope volunteer. Study participants completed a baseline (before randomization) and a 4-month follow-up questionnaire that consisted of 88 multiple-choice questions assessing self-efficacy, social skills, social support from family and friends, social connectedness, emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behavior. The researchers did not find a difference in youth development outcomes, such as self-efficacy, social skills, social support or overall difficulties. The intervention, however, did reduce conduct problems in Jordanian youths. Generally, greater impacts were seen on younger youths (13-15) than older youths (16-21).

MENTORSHIP/SMS TO INCREASE SELF-EFFICACY

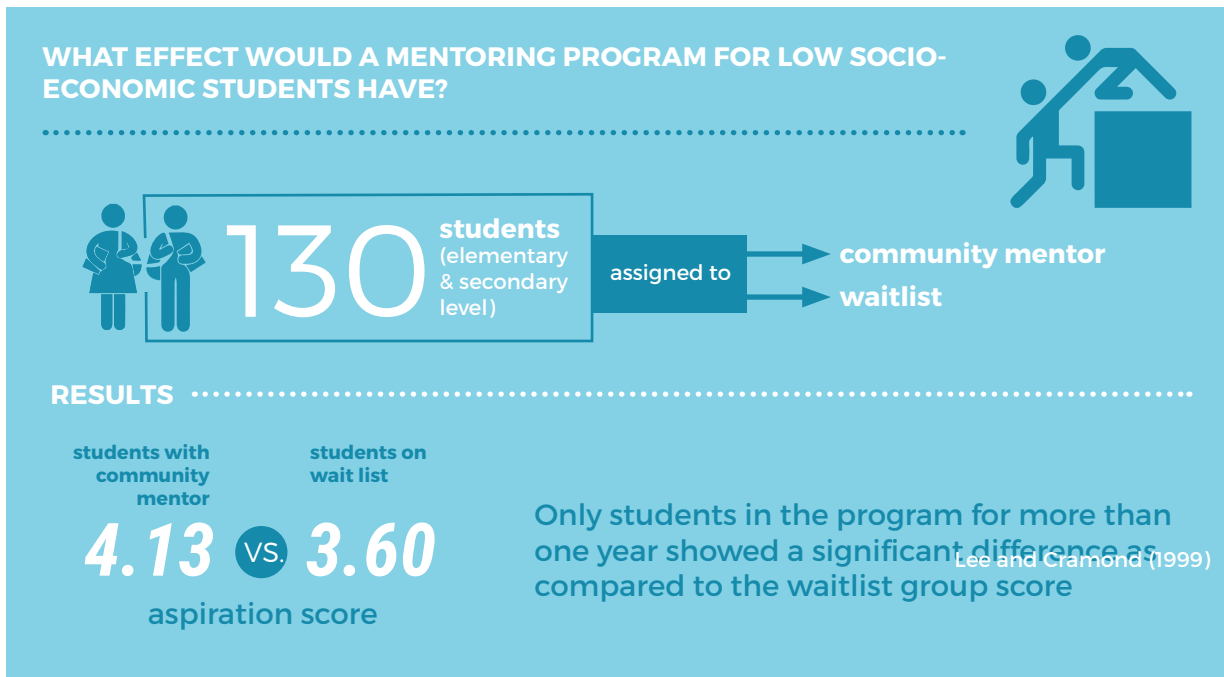
Despite some methodological concerns, **LEE AND CRAMOND (1999)** found that a mentoring program for low socioeconomic students led to increased educational and occupational aspirations, but had no significant effect on self-efficacy or a measure of “possible selves” (beliefs about high achievement or affiliation in the future).

One hundred and thirty students of both elementary and secondary levels were included in the evaluation. Students were assigned to either receive a community mentor or be placed on a waitlist. Mentorship assignment was performed on a rolling basis, which enabled the researchers to divide the students into one of three subgroups based on the length of time that they had been involved in the program:

1. 6 months or less,
2. 6-12 months, and
3. more than one year.

In their first meeting, the mentor and mentee set goals for the student and signed a contract encompassing these goals. Goals varied from improving classroom attendance to learning more about nature. Mentors were required to visit with the student at the school for a minimum of 2 hours per month.

Self-report data was collected by verbal survey (for younger students) or written survey (for older students). Analysis of the survey results showed that students who received mentorship reported higher aspiration (M=4.13) compared to waitlist students (M=3.60). A pairwise comparison of subgroups found that only the students who had been in the program for over a year showed a significant difference (using a .017 significance level) compared to the waitlist group. There were no other significant effects between mentor and waitlist students or between length-of-mentorship subgroups on the other two scales.



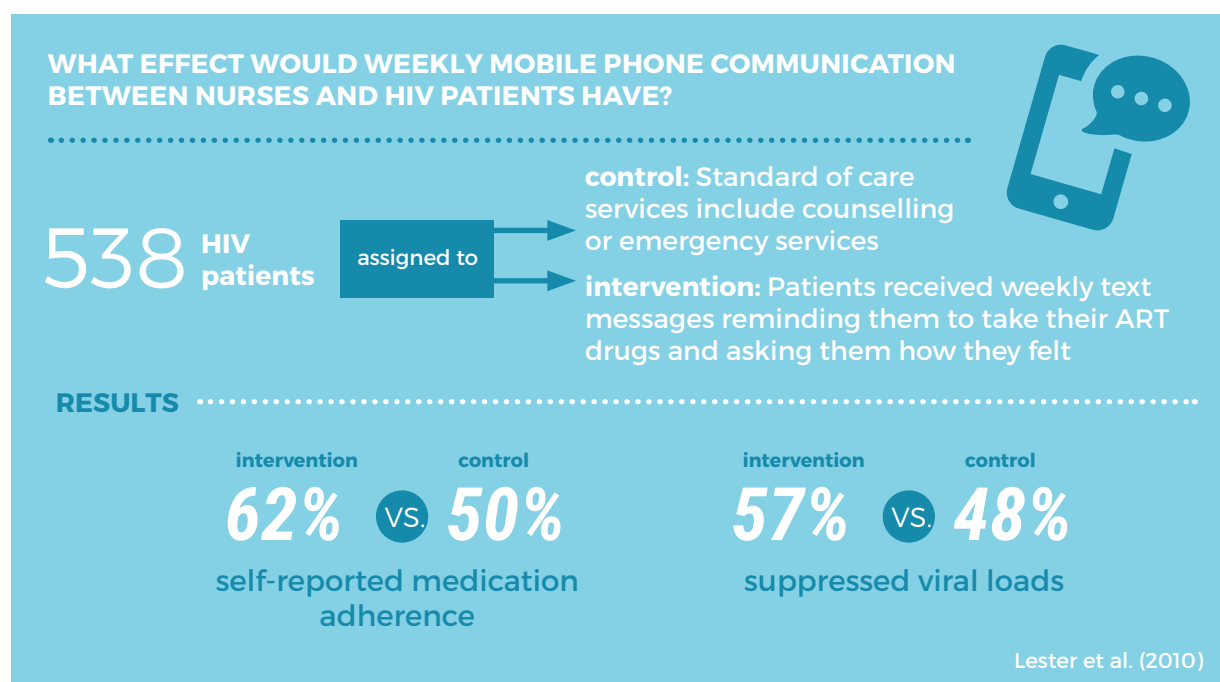
KAZI ET AL. (2017) conducted a survey amongst rural women in Northern Kenya and found that the majority of them had access to a mobile phone and would like to receive text messages from their healthcare provider. Participants were recruited from 6 government clinics located in Kenya’s northern and arid lands (NAL) and 2 clinics in the neighbouring, less remote counties. Inclusion criteria included pregnant women visiting the antenatal clinic and caregivers attending clinics for routine immunisation of children. The survey included questions on patient demographics, mobile phone usage patterns, the feasibility of an SMS text messaging-based mHealth intervention, accessibility to primary health centers and shared use of mobile phones.

284 participants completed the study, 63.4% from NAL clinics and 36.6% from the central highlands. The vast majority of participants has access to a mobile phone or shared a mobile phone (99% in central highlands, 82.1% NAL). There were differences in literacy between the central highlands and NAL, when it came to understanding (98.0% vs 52.2%) and reading (91.3% vs 46.7%). There were no significant difference in the proportion of people in NAL or the central highlands who indicated they would like to receive a weekly SMS from their healthcare provider, though people in the central highlands preferred SMS over a phone call and vice versa in NAL. Overall this study is promising, as it shows access to mobile phones is high even in remote rural regions and acceptability of receiving text messages is high too. A combination of text messaging (one-way and two-way) and phone calls should be assessed for feasibility and impact.

LESTER ET AL. (2010) show that weekly mobile phone communication between nurses and HIV patients significantly improved medication adherence and rates of viral suppression in HIV patients.

For this study, HIV patients about to start their lifelong antiretroviral therapy (ART) were recruited from three different HIV clinics in and around Nairobi. They were eligible if they were HIV-positive, initiating ART for the first time, at least 18 years of age, and had access to a mobile phone. The 538 recruited patients were randomly assigned to either the intervention or the standard of care (control) condition.

Standard of care services include counselling or emergency services. Patients in the intervention group received weekly text messages on Monday morning reminding them to take their ART drugs and asking them how they felt. Patients could either respond by saying that they were doing well or that they had a problem. Patients who failed to answer or answered that they had a problem were called by a nurse within 2 days. Study participants completed a self-reported questionnaire on medication adherence at a 6- and 12- month follow-up visit. In addition, patient's plasma was analyzed at the 12-month follow-up visit. The authors find that in the intervention group, self-reported medication adherence was significantly higher (62% vs. 50%) and that more patients had suppressed viral loads, indicating that they can no longer transmit the virus (57% vs. 48%).



THURIMURTHY AND LESTER (2012) found that text messages can improve adherence to antiretroviral therapy. In their first study, some patients received weekly two-way SMS communication with health professionals, and some did not receive any messages. Patients who received the weekly two-way communications adhered to their antiretroviral therapy better than those who did not. In their second study, all patients received one-way SMS communication. One group received weekly reminders, and some received daily reminders. Antiretroviral therapy adherence was higher for those who received weekly messages than those who received daily messages. The authors also estimate that a weekly one-way message would cost roughly \$1 per patient per year, and a two-way communication intervention would cost roughly \$8 per patient per year.

ELIZABETH found that a weekly text-messaging intervention improved cART adherence and HIV viral load for those vulnerable women. Her group conducted a repeated measures study of the WelTel intervention by measuring change in VL, CD4 count, and self adherence 12 months before and 12 months after intervention was introduced. 80 participants completed the whole process of intervention. And the results showed that Mean VL decreased from 1098 copies/mL in the control year to 439 copies/mL at study end. Adherence to cART significantly improved, whereas appointment attendance decreased slightly with the intervention. Although they got very significant data, an outcome analysis examining the relationship between reply rate and VL did not meet statistical significance. But the research may be worth a further study and WelTel may be an effective tool for improving cART adherence and reducing VL amount for those vulnerable HIV-positive persons.

CASTLEMAN & PAGE (2015) found that a texting-based intervention significantly increased re-enrollment among community college freshman from predominantly low-income backgrounds. One documented cause for disenrollment is a failure to refile the Free Application for Federal Student Aid (FAFSA), with studies showing that 15-20% of Pell Grant recipients in good academic standing fail to refile this important document after their freshman year. Without the financial assistance that the FAFSA can provide many students are forced to abandon their college studies prematurely. The researchers thus designed a personalized texting-based intervention to remind freshmen of FAFSA-related tasks and deadlines, as well as where to find assistance with these tasks on their campus.

808 college freshmen were randomized into either a treatment group which received these text reminders or a control group which did not. 90.8% of experimental sample students were non-white, and 82.8% either had an expected family contribution (EFC) equal to zero or were eligible for federal Pell grants, indicating that they came from low-income backgrounds. Those assigned to the treatment group received 12 personalized texts throughout their Freshman Spring semester (approximately every 2 weeks), while those in the control group did not receive reminders. Data was obtained on both Sophomore Fall and Sophomore Spring enrollment.

Overall, the treatment group was marginally more likely (4.6%) to enroll for the Sophomore Spring semester, though there was no significant difference for Sophomore Fall or continuous Sophomore year enrollment. However, when limiting the sample to those attending 2-year institutions, the intervention had a much larger effect; Sophomore Fall enrollment was marginally greater (11.5%), Sophomore Spring enrollment was significantly greater (14.1%), and continuous Sophomore year enrollment was also significantly greater (13.8%). Furthermore, when limiting the sample to those who attend community colleges and who had a high school GPA less than 3.0 (previously identified as those most at-risk for disenrollment), the effect of the treatment was highly significant (19.8%). The text-message reminders were a low-cost intervention (~\$5/student) that significantly boosted sophomore year persistence among low-income students at community colleges.

WHAT EFFECT WOULD A TEXTING-BASED INTERVENTION HAVE ON RE-ENROLLMENT AMONG COMMUNITY COLLEGE FRESHMAN FROM PREDOMINANTLY LOW-INCOME BACKGROUNDS



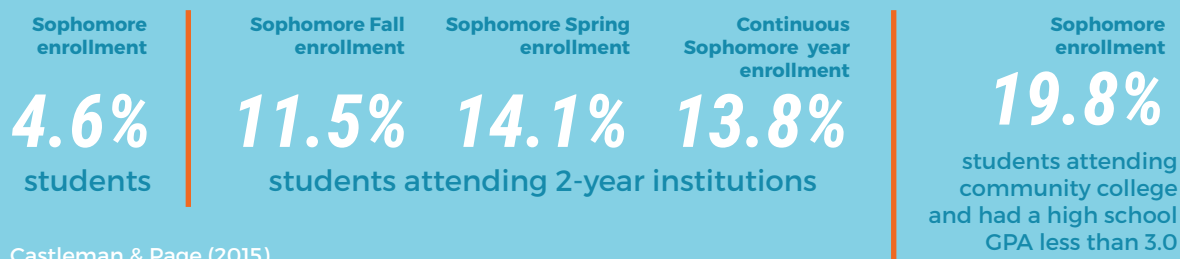
808 college students

assigned to

control: Received no reminder text message

intervention: Received a reminder text message, approximately every 2 weeks

RESULTS for the intervention group



Castleman & Page (2015)

As the subject of her PhD dissertation, **NDEKE (2015)** found a positive effect of e-mentoring on self-esteem, self-efficacy and academic achievement. For this, she compared 50 Kenyan school girls from poor backgrounds enrolled in an e-mentoring program with 50 attending the same two schools but not enrolled in such a program. The e-mentoring program in question was the “Global Give Back Circle” (GGBC, <https://www.globalgivebackcircle.org>), an organization providing female students with email mentoring from volunteer mentors in the US, Europe and Africa. These mentors are adult women who consulted the secondary school girls in all aspects of life. Mentors and mentees determined themselves how often they wanted or needed to communicate - there were no specific guidelines for what this communication should look like.

To measure the effects, Ndeke used a 14-item Likert scale (adapted from Rosenberg) to measure self-esteem, a 15-item Likert scale (adapted from Sherer et al.) to measure self-efficacy, as well as the students’ test scores for English, Kiswahili and Mathematics. She also conducted a focus group discussion with 8 of the students. She found that the students receiving mentoring on average had significantly higher self-esteem (3.4 vs. 2.2 on a 5-point scale), significantly higher self-efficacy (3.98 vs. 2.33 on a 5-point scale) and significantly higher academic achievement (z-scores, a measure equivalent to standard deviations above/below the mean, of 0.32 vs. -0.34 for English, 0.21 vs. -0.23 for Kiswahili, and 0.13 vs. ---0.14 for math).

Ndeke also looked at the effect over time and, with students having spent anywhere from one to over three years in the program, found no significant additional increases in self-esteem or self-efficacy after the initial two years.

Ndeke describes some of her encounters in the focus groups, which shed some light on the contents of the mentoring. As was to be expected, general encouragement played a big role, but some students also reported having received specific and material help such as text books from their mentors. Unfortunately, there is only little data available on what successful mentoring involves, so any project trying to increase self-efficacy in Africa through e-mentoring may be well-advised to consult with the GGBC for best practices or a possible opportunity to collaborate on experiments.

WHAT EFFECT WOULD E-MENTORING HAVE ON SELF-ESTEEM, SELF-EFFICACY AND ACADEMIC ACHIEVEMENT?



100 Kenyan school girls

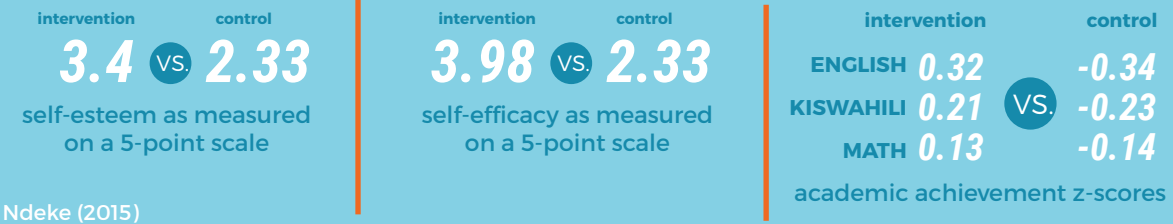
50

→ enrolled in an e-mentoring program

50

→ not enrolled in an e-mentoring program

RESULTS



MOYER (2014) conducted an ethnographic study of peer mentors at an HIV clinic in Kenyatta hospital (near Kibera) and found that personal communication with clients, at least anecdotally, increased treatment adherence. Before peer mentors were available, patients who were diagnosed with HIV tended to leave the hospital immediately without seeking treatment. This may have occurred because patients tend to deny the diagnosis and/or believe that they cannot do anything to fix it. Once the hospital informally hired HIV-positive peer mentors, however, treatment uptake increased. Now, after a person is diagnosed with HIV, they are greeted and shown to a treatment center by a mentor who is HIV-positive and healthy. The mentor will typically also exchange personal mobile numbers with the client, permitting the client to call or text them if they have questions or challenges. In return, the peer mentor will text the client to ask whether they are keeping track of their condition and keeping up with treatment. This type of informal contact is rarely initiated with doctors or nurses. Formal reminder messages, while helpful, are unlikely to have the same effect as personal mentoring. Peer mentoring not only makes clients feel more personally accountable for their health, but it also introduces a positive role model successfully living with HIV.

LESTER (2013) provides a brief overview of further evidence that informal communication may be more effective in treatment adherence than formal communication.

SHPIGELMAN ET AL. (2013) found tone of voice used and frequency of contact to be important factors in their examination of the differences between successful and unsuccessful mentoring relationships. For this purpose, they reviewed an e-mentoring program matching adolescents with disabilities (aged 15 to 20) with university students who also had disabilities (aged 22 to 28). Originally, 9 mentors and 19 mentored students took part in the program, but 2 mentors and 6 mentees dropped out in the course of it. The researchers then analyzed the content of all of the messages (448 in total) sent by the six unsuccessful pairs as well as the three most successful pairs, as selected by frequency of contact and most positive post-evaluation questionnaires.

Mentors and mentees were matched based mostly on gender and shared interests and hobbies. The program provided a fairly structured framework: mentors were

instructed to act as adult role models, to share their life experiences, and to focus on positive aspects of being disabled. Both parties were instructed to communicate via email for eight months and to send at least two messages each week (three face-to-face meetings were part of the mentoring program, although the majority of unsuccessful pairs did not make use of these). The e-mentoring was divided into four phases of two months each: a getting-to-know-each-other phase, in which participants were supposed to find common topics, a moderated communication phase in which they were supposed to discuss topics relevant to adolescents, an online activities phase in which they engaged in activities such as web games or sharing information, and a closure phase, one part of which was the creation of a common souvenir such as a web album.

Mentors who sent more than 50% of the required messages (one per week) and those who scored well on an (unspecified) post-evaluation questionnaire were deemed “successful.” The researchers found few demographic differences between successful and unsuccessful mentors, although it seemed that mentors from therapeutic disciplines such as psychology were more successful than mentors from sciences such as computer science. A main difference was the frequency in communication, with successful pairs largely abiding by the recommended minimum of two messages per week. The researchers posit that due to the asynchronicity of email communication, large gaps in communication may be construed to be a lack of interest and impede the building of trust. They also found that successful participants were more willing to disclose personal information and reacted to each other’s questions and comments. In unsuccessful relationships, the mentors often did not reply to mentees’ questions about themselves. Similarly, they often saw the interaction as unidirectional and did not want to let the mentees help them. Finally, tone of voice was an important difference, with successful pairs employing a more personal and informal tone than unsuccessful pairs (see examples below).

While it is important to keep in mind the limited sample size and to treat this as anecdotal evidence only, the authors’ findings offer some helpful insights into how a beneficial mentoring relationship could be structured, notably by allowing for frequent contact and highly personalized messages.

EXAMPLES OF UNSUCCESSFUL, DISTANT COMMUNICATION...	... AND SUCCESSFUL, PERSONAL COMMUNICATION
<p>I am your mentor in this e-mentoring program. I hope we will become distance friends and correspond via e-mail whatever we would like to.</p> <ul style="list-style-type: none"> • Have you heard about this e-mentoring program? Who told you about it? What do you know about the program? • We will correspond via e-mail from now until the end of June. • What are your expectations from this program? What do you expect from me as your mentor? <p>I expect to get to know you and of course I will tell you about myself.</p>	<p>Hi X, :)</p> <p>How are you?</p> <p>My name is Y and I will be your mentor during the year. I am 28 years old and I study occupational therapy at the university. I wish you could tell me about yourself. What class are you in? What are your hobbies? And anything else you would like to tell me. If you have questions, send them to me and I will try to answer them.</p>

DIRENZO, WEER, AND LINNEHAN (2013) found that an e-mentoring program increased general and career-based self-efficacy for at-risk youth. As part of a larger longitudinal study, the researchers studied students from 50 different high schools with a majority of students under the federal poverty line. The students were matched with an adult mentor and they partook in a year-long curriculum focusing on self-esteem, basic financial knowledge, and career exploration. The students and mentors communicated anonymously and solely through the internet. Before becoming a mentor, the adults completed background checks and training modules. The students completed pre and post surveys that asked about their career aspirations, self-efficacy, and quality of relationship with their mentor (e.g., “my mentor was there when I needed them”). Their career aspirations were measured using the Nam-Powers-Boyd Occupational Status scale, which is a scale of careers 1-100, with 100 being the most prestigious and highest level of living (dentist and physician) and 1 being the least prestigious and lowest level of living (dishwasher). The students’ general self-efficacy was measured using the well known General Self-Efficacy scale. The researchers found that students that had the best relationships with their e-mentors experienced a significant increase in both general and career-based self-efficacy through the course of the curriculum. The presence of good e-mentors combined with the curriculum helped increase general and career-based self-efficacy for at-risk youth.

KAOAIEM ET AL., (2012) found that SMS texts from squad leaders to conscripts increased knowledge and safe sex practices in Thailand. 148 conscripts from one military district were in the experimental condition and 114 from a separate facility were the control group. Groups were matched for background characteristics such as age, education etc. Participants completed a pre and post-test survey consisting of 6 parts: background characteristics, Likert scale questionnaires on knowledge of safe sex practises, attitude towards safe sex, safe sex practises with their partner, familiarity using SMS and mobile phones and lastly satisfaction with the squad leader’s mentorship.

Squad leaders were trained as mentors using monthly meetings, where they received information about the ABC method (Abstinence, Be faithful and Condoms used consistently). Conscripts in the intervention group received training on safe sex practises and came up with text messages about safe sex which were screened by squad leaders and youth communication experts. SMS messages were sent to the intervention group weekly and on special occasions (holidays and Thai festivals). Conscripts were given mobile credit and told to SMS the research team after reading a text. Due to assignments to different regions only 81 intervention and 77 control surveys were collected at the end of the 6 month period. Pre-test comparison between the control and intervention group revealed no significant differences in knowledge or attitudes. After the 6 month period, knowledge of safe sex was significantly higher in the intervention group compared to the control (mean scores 6.3 vs 4.5). Safe sex practises, e.g. using condoms with a risky sexual partner, increased significantly from a mean of 5.6 pre-test to 6.3 post-test in the intervention group. Men felt closer with their squad leader and were satisfied with them as mentors for the programme.

From a pilot study addressing medication adherence for urban African-American diabetics, **DICK ET. AL (2011)** found SMS text message intervention to be a beneficial method for increasing self-efficacy among participants as well as improving health outcomes.

The intervention took a total of four weeks and had a total of 18 participants recruited from the same medical clinic. The researchers used SMS software to send questions to participants asking them whether they completed diabetic specific tasks such as taking their medication, measuring their blood sugar, and checking their feet. Participants could then respond to these messages, and for this, they underwent preparation training. Data on medical adherence and self-efficacy was collected via a recorded phone interview one month after the study asking participants to estimate both their medication adherence and self-efficacy before, during, and one month after the intervention. The former was calculated using reported estimates of weekly missed medical doses and completed foot care appointments while the latter was collected using the diabetes self-efficacy scale (5 point Likert scale).

Results indicated that participants were quite satisfied with the SMS text message system with 94% saying that they would recommend it to friends and family. They responded to 80% of messages requiring a response with a median response time of 6.1 minutes. Missed medical doses significantly decreased during the experiment with the original mean of 1.9 missed doses dropping to 0.6 doses during the experiment. In the period one month after the intervention, this number climbed again to 0.8 doses. For self-efficacy measures, participants reported significantly higher self-efficacy measures during and one month after the experiment compared to before. Other details the participants shared during their interviews were that they felt that the text messages were good reminders and helped to create a set schedule that they could anticipate and prepare for.

Although this study was conducted with a small subject pool and was conducive to changing the self-efficacy of a narrow population, it is a promising sign that SMS text messaging can be used to encourage participants to take a break to engage in healthy behaviors that increase self-efficacy.

BELL (2012) shows that a 2-year mentoring project between youth and adult with legal blindness can significantly increase career decision-making efficacy and positive attitudes about blindness.

The National Center for Mentoring Excellence is a mentoring program for legally blind youth with the goal to improve academic success, community integration, employment outcomes, as well as social skills and career decision making confidence. Youth for this mentoring project were eligible if they were between the ages of 16 and 26, legally blind, committed to a 2-year mentoring program, and resided in either Georgia, Ohio, Texas or Utah. Adult mentors were eligible if they were legally blind and demonstrated successful employment for at least 2 years, academic success and/or independent living. Mentors and mentees were matched based on interests, gender and geography. They participated in four to five yearly group meetings, which included, but were not limited to, guest speaker events, career fairs and company tours. In addition to that, mentors and mentees were instructed to maintain weekly contact, which consisted of face-to-face activities as well as phone calls, emails or texts. Data were collected at three points in time: before the intervention, after the first year, and at the end of the 2-year program.

At each point in time, the 49 youth completed four surveys, conducted by a professional interview team over the phone. Participants answered questions about demographics, and took the career decision self-efficacy survey, which measures the level of confidence in making career decisions, the MHS, a 40-item measure of hope and aspirations, and the SRBS, a 20-item measure of attitudes about blindness. Bell (2012) finds that mentoring significantly increased participant's level

of confidence in career decision making (from mean score of 85.32 to 105.83 out of a maximum of 125) as well as their attitude about blindness (from a mean score of 69.97 to 81.18 out of a maximum of 100).

SELF-EFFICACY

JURY ET AL. (2017) reviewed the psychological barriers faced by low socioeconomic status (SES) students in higher education, how the university can perpetuate these barriers and finally presented 3 examples of psychological interventions that increased academic achievement and quality of low-SES student experience. Universities are set to cater for middle and upper class people and as a result low SES students can often face psychological barriers whilst pursuing higher education. Compared to their high-SES counterparts, low-SES students demonstrate higher levels of physiological stress markers and report lower levels of well-being, a sense of not belonging (“imposter syndrome”), lower self-efficacy and higher fear of failure resulting in setting performance-avoidance goals, which helps to explain the higher dropout rates and lower GPAs of low-SES students.

BOURDIEU AND PASSERON (1964, 1970) argue that low-SES students have a lower chance of success at university due to less access to economic capital as well as less access to cultural capital (e.g., knowledge, behaviors, and values that can be more or less familiar to an individual and more or less promoted in a system). The selection process at universities favours high-SES students and universities also promote independent values (work independently, learn to express yourself) over interdependent values (working as a community) which align more with high-SES student values than with low-SES students. As a result low-SES students experience less comfort and fit, greater levels of stress and ultimately don't perform to their potential.

Interventions aiming to reduce the social-class achievement gap should recognise that the gap is based on the larger context (university) as well as individual factors. 3 simple, low-resource experiments which reduced the SES gap are discussed. In the first experiment students were asked to read a list of values (e.g. independence, belonging to a social group) and select the 2 or 3 most important values for them (self-affirmation) or the 2 or 3 least important values (control). Self-affirmation students explained why the values were important for them whilst control students explained why these values may be important for someone else. First-generation students in the affirmation group earned higher grades both at the end of the semester and year, and reduced concerns about their background compared to first-generation students in the control. There was a 50% reduction in the social class achievement gap. In the second experiment students attended a 1-hour panel with older students discussing their experiences in university. Older students either highlighted how their SES shaped their experiences (difference-education) or didn't discuss the role of their background (control). A follow-up survey at the end of the year found that first-gen students who attended the difference-education panel had higher grades, sought more academic resources and were better able to cope with stressful situations than first-gen students who attended the control panel. Of interest, all students who attended the difference-education panel felt more comfortable discussing their background during a speech task than the control group. In a third experiment the meaning of an exam was framed as a tool for

learning or as a tool to identify differences in ability. Low-SES students performed worse than high-SES students when the exam was framed as a selection tool but performed equally when presented as a learning tool.

BAIOCCHI ET AL. (2017) show that a 6-week classroom-based girls' empowerment program in informal settlements of Nairobi, Kenya reduced the rate of sexual assault among adolescent girls and increased self-efficacy.

The authors used a cluster-randomization to allocate 14 primary schools in the informal settlements of Nairobi to an intervention condition and 14 other schools to a control condition. The roughly 6,300 girls were between 10 and 16 years of age. Students in the intervention group received six 2-hour classroom-based sessions over a period of 6 weeks as well as a booster session within 3 months. Girls received the IMPower intervention, which taught girls self-defense, how to avoid risky situations and to advocate for themselves. Boys received an educational intervention designed to promote gender equality and develop awareness about gender interactions. Both sessions included role-plays, facilitated discussions, and verbal and physical skills practice. Students in control schools received a one-time standard of care life skills class that lasted between 1.5-2 hours. Every school-aged child receives these classes, which covers topics such as hygiene, food safety and personal rights. All students completed a written baseline survey and follow-up survey after 9 months. It asked about incidences of rape in the previous year, reported perpetrator, whether or not students disclosed the assault to anyone and to whom, and it asked students to complete the Generalized Self-Efficacy Scale, a 10-question 4-point survey. The follow-up survey included additional questions on whether the girls made use of the skills learned to prevent sexual assault. Outcomes were only measured for girls in this study.

With an initial rate of rape of 7.3% a year, the intervention resulted in a 3.7% decrease in the rate of sexual assault in the intervention group. The authors also found an increase in the mean generalized self-efficacy score of 0.19 (on a 4-point scale). Further, the intervention reduced one-time incidences, but had little impact on repeated encounters by the same offender. 35% of girls reported using the skills learned in the trainings to stop a sexual assault. Baiocchi et al. conclude that self-efficacy may be a powerful means in reducing sexual assault.

HUANG ET AL. (2018) found that a bicycle train intervention, whereby students bike to school and are chaperoned by study staff on bikes, increased both low SES student and parent self-efficacy related to biking. The authors conducted a bicycle train intervention with 60 students from 4 different schools. Participants were required to have the ability to ride or learn to ride a bicycle, live within 2 miles of their school, and be in the 4th or 5th grade. The schools that were chosen had >60% of students eligible for free or reduced lunches, <50% students were latino or white, and the school could not have an existing bicycle train or walking school bus program. The participants from 2 of the schools received the intervention, while the participants in the other 2 schools did not. Prior to randomization, all participants received bicycles, bicycle equipment, and a 2-3 hour professional riding safety course. 1-2 weeks prior to randomization, participants and their parents completed self-efficacy scales, and again 4-6 weeks into the intervention. Study staff chaperoned the intervention group students to and from school every school day during the intervention. Those students who partook in the bicycle train program had increases in self-efficacy of 0.93 standard deviations (objective measure not reported) compared to those who did not. The parents whose children partook in the bicycle train program had increases in self-efficacy of 0.63 standard

deviations compared to those whose children did not. Self-efficacy in this study was measuring, for the children, their belief in their ability to bike to school by themselves, and for the parents, the belief that their child had the ability to ride a bike to school by themselves.

ACHARYA ET AL. (2009) examine the effectiveness of a girls' life skills program in Uttar Pradesh, India, finding that it significantly increased girls' sense of agency, attitudes towards egalitarian gender roles, and knowledge of pertinent health issues. "Better Life Options" is an empowerment curriculum first introduced in 1990, and has become one of the more widely used programs of such a nature in India. 27 villages in the Lucknow district were chosen to be surveyed, with 18 of these villages receiving the intervention and 9 serving as a control. More villages were assigned to the intervention in order to maximize the variability of the populations. The intervention consisted of daily meetings outside of school that followed the established and extensive curriculum, including 4 main components: (1) the establishment of a safe space for group discussions and peer networking; (2) the development of girls' agency and fostering of equal gender role beliefs; (3) education pertaining to health (particularly sexual and reproductive health), environmental, and legal issues; (4) the development of livelihood skills intended for future career use. Surveys were administered at a pre-intervention baseline and a 9-15 month post-intervention endline, and included demographic questions as well as those pertaining decision-making ability (pertaining to choice of friends, spending, education and work choices), physical mobility, self-efficacy, attitudes towards gender roles, access to economic resources, and awareness of health- and marriage-related issues. Index values for these subjects were created by summing the mean scores for the relevant yes/no questions.

In total, 1038 unmarried girls aged 13-17 were surveyed, and while all of those in the intervention villages were invited to participate in the program, only 390 reported some level of attendance, and only 257 reported regular attendance. The change in decision-making scores (measured on a 0-5 scale) was 0.27 greater for intervention participants as a whole, and 0.47 greater for regular attendees. Similarly, the change in mobility scores (measured on a 0-7 scale) was 0.39 greater for intervention participants as a whole and 0.61 greater for regular attendees. Notably, there was no significant difference in changes for self-efficacy scores (measured on a 0-3 scale) between the control and intervention group as a whole, though the difference in changes between regular attendees and the control (0.18) was significant. Furthermore, measures of resource access, attitudes towards gender equality, awareness of health and legal issues, and preferred marriage age increased significantly in the intervention groups compared to the control. Qualitative results echoed these findings, as interviewed girls who had attended the intervention reported increased confidence, better savings habits, and reduced fear when speaking openly. The researchers stressed that the largest problem facing the intervention is continued and regular attendance, as the benefits for irregular attendees are comparably limited. Additionally, there seemed to be a selection bias within the intervention villages, as non-participating girls had on average significantly lower standards of living, years of schooling, and current school enrollment metrics compared to the participating population.

WRIGHT, NORRIS, GIGER, AND SURO (2012) found that a program focusing on parent and community involvement in low-income school children's dietary decision-making and self-efficacy improved several health measures.

The authors hypothesized that a university-community partnership through coordinated school health programs (CSHP) could improve health outcomes, primarily outcomes related to childhood obesity, nutrition, and diet self-efficacy. The intervention consisted of a program, Kids Nutrition and Fitness, that lasted for 6 weeks and focused on nutrition and physical activity after school. The program was family-centered, but conducted on campus in weekly 90-minute sessions. It also consisted of a parental support group. The intervention also included school and community-level activities, such as physical and mental health services from local community clinics, the establishment of a School Health Advisory Council that instituted policies about physical activity and health diet at school, professional development seminars for staff focusing on health, and home-level activities (e.g. a bimonthly educational newsletter mailed to parents' homes). The authors conducted a randomized controlled pilot of the program with 251 predominantly Mexican-American children ranging in age from 8 to 12 who went to school in low-income Los Angeles areas. A mixed model of repeated measures analysis was used to ascertain changes in BMI and dietary behaviors, as well as food preferences, knowledge, and self-efficacy. Data were collected at baseline, 4, and 12 months.

After 12 months, children in the intervention group had decreased BMI and increased daily intake of vegetables and fruit. They also had an average increase in healthy food choice self-efficacy of 1.02 ($p = 0.03$) using the Child and Adolescent Trial for Cardiovascular Health After-School Student Questionnaire. Parent and community involvement also increased. The authors concluded that a CSHP-type program using parent and community involvement strategies was effective in reducing the risk of obesity and increasing healthy eating in school-aged Mexican-American children attending low-income schools. They emphasized the need for larger-scale tests in more diverse environments to verify the findings.

A study by **GROSS ET AL. (2003)** found that having low-income preschool parents undergo child-rearing training significantly increased their self efficacy over the span of a year. The experiment randomly assigned day care centers to either parent training, teacher training, parent and teacher training, or no training. The 12 week intervention used was the Incredible Years BASIC Program previously administered by Webster-Stratton. This program provided trainees (208 parent-child pairs) with an interactive approach to solving toddler-related obstacles, and it employed videotape vignettes and homework assignments to educate those enrolled. The results found self-efficacy reports from parents continuously climbed in the one year period after the intervention. At each time period measured in that year (baseline, post-intervention, 6-month, 1 year), trained parents reported a 2.1 point increase in self-efficacy which was measured using the Toddler Care Questionnaire (scores range from 38 to 190). This measure uses a 38-item Likert scale to assess parents' self efficacy concerning tasks and situation related to child-rearing. The difference in mean self-efficacy scores between the parents who received training compared to those who did not were significant at the 1% level. This increase in self efficacy mimics the positive effects observed in middle-income, less ethnically diverse populations.

The study suggests that the preparation under the Incredible Years BASIC Program provided low-income parents with greater perceived control over the challenging situations they face during child-rearing. In addition, the experiment found increased parent positivity after the intervention. These results carve a pathway for parents to gain self efficacy despite the fact that low socioeconomic status previously has shown to impede parental self efficacy.

WASHINGTON, MOXLEY, AND TAYLOR (2009) found that life management enhancement (LME) group interventions help increase self-efficacy among elderly, homeless, minority women. Researchers took a sample of homeless black women over the age of 50 from several community sites, including homeless shelters and warming centers. The women were randomly assigned to either the treatment or the control group. Women in the treatment group met twice a week for six weeks and were taught techniques to increase perceived control, personal agency, and confidence in relationships as well as minimize the effects of psychological trauma as a result of their homelessness. Women in the control group also met twice a week of six weeks, but did not participate in the LME group. The researchers used multiple different instruments in this study, including the Belief in Personal Control Scale (Berrenberg 1987) and the Interpersonal Dependency Index (Hirschfield et al. 1977). Participants completed the surveys before the program, after the program, and at a two month follow up. The researchers found significant differences in belief of personal control between the treatment and control groups ($p < .001$). From the Interpersonal Dependency Index, researchers also found significant differences in lack of self confidence, with the women in the LME program exhibiting much more self confidence than the control group. The researchers also tested if there was a relationship between the BPC and IDI scales and found that the two are significantly correlated. Through participation in the LME group intervention, these women increased their self-efficacy and gained valuable skills to help them escape homelessness.

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