Policy Research Working Paper 10849

Therapy, Mental Health, and Human Capital Accumulation among Adolescents in Uganda

Sarah Baird
Berk Ozler
Chiara Dell'Aira
Luca Parisotto
Danish Us-Salam

WORLD BANK GROUP
Development Economics
Development Research Group
July 2024

Policy Research Working Paper 10849

Abstract

Using a cluster-randomized trial, this paper evaluates the impact of group-based interpersonal therapy on mental health and human capital accumulation among adolescent girls in Uganda who were at risk of moderate or severe depression at baseline. The study was designed to test whether lay provider-led group-based interpersonal therapy for adolescents could be effectively scaled up using modest resources in a low-income country. It also tested whether a lump-sum cash transfer offered at the end of therapy provided any additional benefit. The findings show that group-based interpersonal therapy increased the share of adolescents with minimal depression by 20–30 percent 12 months after therapy, but these effects dissipated by the 24-month follow-up. Small short-term effects on human capital accumulation were also not sustained at 24 months. Surprisingly, the marginal effect of providing cash transfers to group-based interpersonal therapy beneficiaries on mental health was large and negative, persisting two years after baseline. The paper provides suggestive evidence that the adolescents were frustrated by their inability to use the cash toward their own goals because of the need to divert funds toward the essential needs of their families during the COVID-19 pandemic.

This paper is a product of the Development Research Group, Development Economics. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/prwp. The authors may be contacted at bozler@worldbank.org. A verified reproducibility package for this paper is available at http://reproducibility.worldbank.org, click **here** for direct access.

Therapy, Mental Health, and Human Capital Accumulation among Adolescents in Uganda

Sarah Baird[1], Berk Ozler[2], Chiara Dell'Aira[2], Luca Parisotto[3], and Danish Us-Salam[4]

[1]Department of Global Health, George Washington University, Washington, DC, corresponding author; sbaird@gwu.edu

[2]Development Research Group, The World Bank, Washington, DC

[3]Department of Economics, Bocconi University, Milano

[4]Behavioural Consumer Finance Unit, Central Bank of Ireland

Keywords: adolescence, mental health, group interpersonal psychotherapy, cash transfers, COVID-19

JEL Codes: O10, C93, I15, J16, J13

1 Introduction

Mental disorders are a major contributor to years lived with disability worldwide, with major depressive and anxiety disorders among the leading specific causes (GBD 2019 Mental Disorders Collaborators, 2022). Adolescents and young women are especially at risk, with depressive disorders the leading cause of years lost to disability among 15-19 year old females globally (Guthold et al., 2021). Beyond the immediate welfare losses, mental health disorders developed during adolescence can also have long-term consequences, both because they are associated with lower human capital accumulation and because most mental disorders that persist into adult life first manifest between the ages of 12 to 24 (Patel et al., 2007).[1] Recognizing the growing body of evidence suggesting a negative feedback loop between poverty and mental illness, the Lancet Commission on global mental health and sustainable development has called for urgent action to prioritize mental health interventions as a means to promote sustainable development, uphold human rights, and foster social inclusion (Patel et al., 2018). It is therefore highly pertinent to identify efficacious and scalable interventions tackling adolescent mental health, especially in low- and middle-income countries (LMICs) (Patel and Kleinman, 2003; Ridley et al., 2020).

One such intervention that has received considerable attention and has shown promise is manual-based "talk therapy" — most often based on cognitive behavioral therapy (CBT) and/or interpersonal therapy (IPT) — which can be delivered in groups and by trained non-specialist providers (Singla et al., 2017; Van Ginneken et al., 2013; Ridley et al., 2020). This approach is motivated, in large part but not exclusively, by resource constraints and the limited availability of specialist providers in most LMIC settings, especially in rural and remote areas (Saxena et al., 2007; Chisholm et al., 2016). A growing literature has found that such therapy interventions can result in sizable improvements in mental health and economic outcomes, at least in the short-run (Singla et al., 2017; Lund et al., 2011, 2022). However, the longer-term and at-scale impacts are less clear, and a number of recent trials have failed to find sustained effects beyond the 12-month post-intervention period (Lund et al., 2022; Ridley et al., 2020; Haushofer et al., 2023a). Furthermore, there is little evidence on the impact of mental health interventions on broader well-being — e.g., outcomes related to human capital accumulation (Ridley et al., 2020).

We contribute to this body of work by evaluating a pilot program, jointly conducted by StrongMinds and BRAC Uganda. StrongMinds is an International Non-Governmental

[1] Mental health disorders in adolescence are associated with increased risky decision-making (DiClemente et al., 2001; Fishbein et al., 2006); future mental and physical health problems (Evans et al., 2007; Hardaway and Smalls, 2009); lower educational achievement (Currie and Stabile, 2006; Eisenberg et al., 2009; Fletcher, 2008; Kessler et al., 1995; Stein and Kean, 2000); and low self-esteem and self-efficacy (Sowislo and Orth, 2013).

Organization that provides group-based IPT (IPT-G) to women led by community workers it recruits and trains intensively.[2] StrongMinds Uganda (SMU) began working with BRAC Uganda to develop a model to treat adolescent females with depression through BRAC's "Empowerment and Livelihood for Adolescents" (ELA) program. ELA operates community clubs that girls can attend five times a week, which provide a safe space and an opportunity to socialize, while also offering vocational and life skills training (Bandiera et al., 2020). The clubs are led by female mentors who are selected from the community, given a low-intensity training, and paid a small stipend. While evaluations of ELA clubs have shown mixed effects globally (Bergstrom and Özler, 2023), in Uganda they were shown to be effective in reducing teen and out-of-wedlock pregnancies, child marriages, and non-consensual sexual activity (Bandiera et al., 2020). The complementarities between BRAC's ELA programming and SMU's goal of testing its model with adolescent populations, along with the availability of the ELA club mentors as lay-therapists, makes ELA clubs a promising avenue for the delivery of therapy to adolescents at scale and low cost. Our study aims to test whether a version of SMU's IPT-G, in which ELA club mentors are given additional training and are supported by SMU staff to lead a 14-week group-based talk therapy intervention, can be effective in causing sustained reductions in depression among adolescent females and, if so, whether this can have any knock-on effects on increased human capital accumulation.

To identify the impact of SMU's therapy delivery model, we implemented a cluster-randomized trial, in which 106 ELA clubs (the clusters) were randomized with equal probability into a control group and two treatment arms: (i) the SMU therapy intervention; and (ii) the SMU intervention followed by a one-time lump-sum unconditional cash transfer announced and delivered after the end of therapy. The study participants were recruited from within each ELA club's catchment area, with all adolescent females aged 13-19 listed and screened for depression. Those exhibiting symptoms of depression were invited to participate in the study. We conducted detailed surveys with the study participants at baseline and three follow-up rounds.

Our study was designed to address three questions. The primary motivation was to assess whether IPT-G can be effective at scale in reducing depression and anxiety among adolescent females in Uganda, when delivered by nonspecialist age-peer providers.[3] Second, while cash transfers alone may have transitory effects on psychological well-being (see, e.g., Baird et al. 2013; Haushofer et al. 2023b; McKelway et al. 2023), there is reason to believe that they may also enhance the effects of a proven therapy intervention if offered immediately following ther-

[2]See https://strongminds.org/about/ for details.

[3]The extant evidence suggests that CBT-based therapy interventions can be effective in improving psychological well-being, but the evidence supporting the use of these therapies for adolescents is much thinner (Singla et al., 2017; Ridley et al., 2020).

apy. The idea is that, by providing relief from the day-to-day worries of budget constraints and some insurance against negative shocks, cash transfers may create the mental space needed to internalize the lessons and practice the behavioral skills obtained during therapy, thus increasing impacts. Our trial aimed to test this hypothesis, for which the evidence is mixed (Blattman et al., 2023; McKelway et al., 2023; Bossuroy et al., 2022; Haushofer et al., 2023b). Third, and finally, our trial aims to test the hypothesis that reducing depression during adolescence might translate into improved human capital accumulation. In the short-run our primary and secondary outcomes focus on changes in aspirations, preferences, and expectations as mechanisms for investments in human capital, such as desired fertility, time preferences, educational aspirations, and ideal age of first pregnancy and marriage. In the medium-term, we examine actual changes in human capital including school enrollment and skill-based competencies, incidences of pregnancy and marriage, risky sexual behavior, and self-efficacy.

We find that 18%-28% of individuals in the control group (depending on the scale used to measure psychological distress) had recovered to have minimal depression approximately 12 months after the IPT-G intervention. Therapy significantly improved this primary outcome by more than 5 percentage points (pp) 12 months post therapy. However, these effects dissipated and were not statistically significant at the 24-month follow-up. We found no effects on secondary outcomes of psychological well-being, such as self-esteem, resilience, and locus of control at any of the follow-ups. It is important to note that the 14-week therapy intervention was conducted in late 2019, immediately prior to the emergence of the COVID-19 pandemic, meaning that the 12-month follow-up surveys were conducted at the height of the pandemic. While our results imply that IPT-G had some protective effect, it is plausible that the impacts of therapy may have been muted by the difficult conditions caused by the pandemic, including extensive school closures – Uganda had the longest school closures in the world at 22 months (Blanshe and Dahir, 2022) – and partial shutdown of the Ugandan economy.

Given the size of the impacts on mental health, we would expect limited changes in human capital accumulation. This is reflected in our findings at 12 months where we find mixed effects of IPT-G, with modest positive impacts on school enrollment, delayed marriage, desired fertility, and time preferences. While these effects are small (and generally do not survive multiple hypothesis testing), they are suggestive of the important role that improved mental health plays in broader well-being. By the 24-month follow-up, these impacts had also dissipated, with none surviving corrections for multiple hypothesis testing.

Surprisingly, the marginal effect of providing lump-sum cash transfers to IPT-G beneficiaries immediately following the completion of therapy was large and negative on mental

health: beneficiaries of the combined treatment arm (IPT-G+) were 10 pp less likely to have minimal depression compared with those who received IPT-G alone at the 12-month follow-up. These negative effects were still present and statistically significant at the 24-month follow-up. There were no impacts on human capital outcomes. We hypothesize that the negative impact of cash reflects the fact that it was distributed right before the onset of the COVID-19 pandemic – an unexpected negative shock. Exploratory analysis of data from the follow-up surveys suggests that the adolescent beneficiaries were frustrated by their inability to put the cash towards their own goals (such as starting a small enterprise), since they had to divert part or all of the transfer towards the essential needs of their families. We discuss this finding in more detail in Section 3.4.

Our study contributes to a growing literature on the impact of CBP/IPT interventions on mental health in LMICs. Lay-provider led therapies have received considerable interest, and were shown to be effective (in the short run) by Singla et al. (2017), who conducted a meta-analysis of 27 studies with a highly significant average effect size of 0.4 standard deviations. However, a number of more recent studies have produced longer-term results and the findings are mixed. Baranov et al. (2020) showed sustained effects of the Thinking Healthy Program (THP), which is a CBT-like intensive intervention adopted by the WHO, on depression among women with perinatal depression in Pakistan after 7 years - with lasting effects on financial empowerment and investments in children, particularly among mothers who gave birth to daughters. In contrast, Bhat et al. (2022) and Maselko et al. (2020) evaluate peer-delivered programs based on THP to women suffering from maternal depression in South Asia and find no impacts on depression or other outcomes 3 to 4 years post-intervention.[4] In another notable contribution, Blattman et al. (2023) evaluate a group-based CBT intervention targeted to young men actively involved in crime and violence in Liberia's capital Monrovia and found that therapy reduced antisocial behaviors 10 years later.

In line with our findings, the above evidence suggests that CBT-based therapy interventions can be effective in improving psychological well-being in the short-term. However, these effects often do not persist in the longer-term and therapy alone rarely causes persistent effects on economic outcomes, such as consumption expenditures, assets, or employment.[5]

[4]Bhat et al. (2022) also report on the Health Activity Programme (HAP), a psychological treatment based on behavioral activation targeted to adults in primary health centers in Goa, India. They find that, unlike THP, HAP caused sustained reductions in depression 5 years post-intervention and improved their self-belief, reduced their overconfidence, and increased self-assessed levels of patience and altruism. However, it had no effects on employment or consumption, suggesting the possibility of other constraints to improvements for those outcomes.

[5]A recent meta-analysis of RCTs of mental health interventions in LMICs generally supports this conclusion, although it does find some effects on time in and functioning at work (Lund et al., 2022).

Summarizing the same body of evidence, Haushofer et al. (2023b) state: "...intensity may combine with circumscribed intervention goals and perhaps timing to produce lasting effects. Thus, the most successful interventions may be those that are high-intensity and have specific goals; but even their effects may be time-limited." Thus, the studies by Baranov et al. (2020) (16 home visits by a health worker to prenatally depressed women) and Blattman et al. (2023) (24 3-4-hour sessions targeted to young men involved in crime and violence) are good examples of successful interventions with persistent effects on mental health and some intermediate economic outcomes, such as financial empowerment and investments in children.

Our study also contributes to a recent and growing literature on safety nets and mental health, specifically on the marginal impact of adding cash transfers to mental health interventions. In Blattman et al. (2023), a cash transfer delivered after the group-based CBT intervention had no detectable additional impact on antisocial behaviours. Bossuroy et al. (2022) compare the marginal effect of adding a psychosocial intervention (life skills training and community meetings on aspirations and social norms) to a multi-faceted anti-poverty program in Niger to that of adding a lump-sum cash grant. It finds the addition of the psychosocial intervention to be more cost-effective than the cash transfer. Haushofer et al. (2023b) compare the effects of a CBT-based light therapy intervention with a one-time large cash transfer to poor rural households in Kenya and find that the therapy intervention had no effect on psychological or economic outcomes, while the cash transfer improved economic and psychological outcomes in the short run - regardless of baseline mental health status. The combined intervention was no more effective than cash alone. However, a follow-up study on the same intervention found no persistent effects of cash on any outcome, as well as reduced psychological well-being among households who received no cash in treatment areas (Haushofer et al., 2023a). McKelway et al. (2023) compared the short-term effects of a 6-week phone-based CBT targeted to older adults living alone in Tamil Nadu, India with a small one-time cash transfer. Neither intervention (nor the two together) had any effects at the 3-month follow-up. In summary, the extant literature offers no robust evidence that cash transfers following therapy provide significant additional benefits, which is consistent with the findings of this study.

The remainder of our paper is structured as follows. Section 2 provides the background for our study, describes the interventions, the experimental design, and data collection. Section 3 presents the results on mental health and human capital accumulation. We present the findings separately for the therapy arm (IPT-G) and the combined therapy and cash arm (IPT-G+). Section 4 concludes.

2 Experiment design

2.1 Interventions

2.1.1 Interpersonal therapy

Interpersonal therapy (IPT) is a time-limited, manual-based intervention that was developed in the USA for the treatment of Major Depressive Disorder (MDD) (Klerman et al., 1984; Weissman et al., 2000; Weissman, 2020), and was subsequently adapted to treat depression in adolescents (Mufson, 2004; Morris, 2012; Rosselló et al., 2012).[6] It is widely recognized as an efficacious and effective form of psychotherapy with a solid evidence base, although much of the research comes from high-income countries (Cuijpers et al., 2011, 2016). In 2015, the WHO's Guideline Development Committee recommended that psychotherapy with or without pharmacotherapy be used as first line treatment for moderate to severe depression, especially in resource constrained settings and in cases where medication is discouraged (World Health Organization, 2015, 2019). As considerations of cost-effectiveness are more binding in low-resource settings, group-based IPT is attractive as an alternative treatment option to individual IPT. This was confirmed by Rosselló et al. (2012), which tested both modalities, and found IPT-G to be a cost-effective means of providing efficacious treatment to adolescents drawn from schools in Puerto Rico. In Uganda, our study setting, IPT-G has been shown to be compatible with the local culture and promising in reducing depression and dysfunction in adults (Bolton et al., 2003). Appendix Section B.1 provides a more detailed background on IPT.

StrongMinds is a non-governmental organization dedicated to treating depression in Uganda and Zambia.[7] At the time of this study, its delivery model focused on hiring and training lay-community members (typically former therapy group members or local volunteer counselors with limited formal education) to serve as facilitators for IPT-G (StrongMinds, 2023a). Initially, StrongMinds focused on treatment for adult women, but in 2019 adapted their model specifically to focus on adolescents in school.[8] For this study, SMU partnered with BRAC Uganda to pilot delivery of IPT-G to adolescent girls (both in school and out of school) through ELA clubs. This marked the first time SMU (i) delivered therapy to out-of-school adolescent females, (ii) used youth mentors, and (iii) delivered therapy through a partner organization.

[6] The IPT model was adapted to treat a number of related disorders in different populations, see e.g., Lipsitz and Markowitz (2013) for a comprehensive list of references.

[7] StrongMinds America was launched in 2021 focusing on young people aged 16-25 in New Jersey, USA.

[8] IPT is well suited for the treatment depression in adolescence, as it is a period of transition during which interpersonal relationships and conflicts play an outsize role (Mufson, 2004; Morris, 2012).

SMU provided training and supervision to the ELA club mentors to deliver a 14-week course of IPT-G.[9] The timeline of the intervention relative to data collection is described in Section 2.2.2 and shown in Figure 1. Before the start of the intervention, the mentors received six days of training covering the entire process of delivering IPT-G.[10] During therapy, SMU mental health supervisors conducted both scheduled and impromptu visits to observe the mentors at work. The mentors were assessed using systematic criteria laid out in the SMU quality assurance tool, and were provided immediate feedback. SMU also held weekly debrief sessions where the previous week's activities were reviewed, feedback from the week's observation was discussed, and refresher training on the next week's sessions were held. A more extensive mid-therapy refresher training exercise was also held, with SMU adapting their training to the specific needs of the mentors to improve implementation fidelity. The approximate cost of delivering IPT-G in this study was $48 per person invited to therapy.[11]

2.1.2 Cash transfers

One-time, lump-sum cash transfers were delivered by BRAC Uganda immediately following the end of the IPT-G in the combined treatment arm (see Section 2.3.1 below). The transfers were in the amount of 250,000 Ugandan shillings (USD 69 at nominal exchange rates as of September 6, 2019). The amount was chosen to roughly align with the annual amount transferred by the Uganda old age pension (Kidd and Tran, 2017) and in line with other cash transfers targeting adolescents, e.g., (Baird et al., 2019). The transfers were unconditional, in the sense that all study participants who were screened into the study in the IPT-G+ treatment arm were offered the transfers. The framing of the transfers was that they were a part of the intervention that is aiming to improve the well-being of the subjects. The transfers were delivered either via mobile money directly from BRAC's main office (8.7% received it directly into their own account, while 63.3% received it by mobile money to the household), or in person (28.1%) for those without a mobile money account.

[9] Appendix B.2 describes the criteria to be an ELA mentor. In addition to these criteria, if an ELA mentor was herself deemed to suffer from depression, she was no longer eligible (one mentor fit these criteria).

[10] The newly recruited mentors (89 in total) were trained in three batches over the course of three weeks. The training was conducted by four facilitators. The training covered counseling skills, provided an overview of depression, introduced IPT-G and its theoretical foundations, and described how to carry out each phase of IPT-G - placing particular emphasis on the pre-group session and initial phases of the therapy. Appendix B.3 contains more extensive details on SMU's training and supervision for the delivery of IPT-G in this study.

[11] At the time of this study SMU was treating approximately 23,000 women at a cost of $110 per women. The same figures were 335,000 women at a cost of $40 per patient by the end of 2023 (StrongMinds, 2023b).

2.2 Sample and data

2.2.1 Sample

The intervention was delivered in ELA clubs managed and operated by BRAC Uganda. BRAC has established ELA club branch offices throughout the country, each of which oversees several clubs. Eight ELA branch offices in and around the Kampala area were selected for this study, of which six were located in urban areas and two in peri-urban areas. The eight branches can be considered as corresponding to eight distinct geographical areas in and around Kampala. A total of 115 ELA clubs fell under their purview, with each branch managing 8 to 15 clubs. Out of the 115 clubs, 9 were excluded as they were found to no longer exist or function regularly, and the remaining 106 were randomized into one of the three treatment arms.

The sample of adolescents enrolled into the study were selected from the villages and residential areas surrounding the ELA clubs. A radius of 500-meters around each club was drawn and enumeration teams listed all adolescent females aged 13-19 who resided within these catchment areas.[12] During the listing, consenting (and/or assenting, as appropriate) individuals were screened using the eight-item Patient Health Questionnaire depression scale (PHQ-8). Individuals who scored 10 or above, which indicates a risk of moderate or severe depression (Kroenke et al., 2009), were recruited into the study. Overall, 1,919 adolescent females across 106 clusters were successfully recruited into the study.[13]

2.2.2 Data

There were four rounds of data collection during the study. A baseline survey was conducted between June-August 2019, prior to the IPT-G intervention. The IPT-G intervention – i.e., the 14 weekly group therapy sessions – then ran between September and December 2019 at all the clubs assigned to the two treatment arms. A second round of data collection, the rapid resurvey, took place immediately following completion of the intervention, between November 2019 and February 2020. The cash transfers were announced and distributed to the individuals in the combined (IPT-G+) treatment arm after the rapid resurvey was completed, in March 2020.

There were two additional rounds of data collection: a midline survey – approximately

[12] In a small number of clusters, due to high population density, the teams were not able to complete the screening of all 13-19-year-old females before having to move on to the next community. In those clusters, it is possible that the population that was screened was not a random subsample of all households with at least one 13-19-year-old female member.

[13] The PHQ-8 threshold of 10 threshold was met by 45% of screened individuals. Within the screened-in individuals, the consent rate was high, with only 3% refusing to participate.

one year after the intervention – and an endline survey – approximately two and a half years after the intervention. Figure 1 shows the study timeline. All surveys were administered face to face except for the midline survey, which had to be conducted over the phone due to COVID-19 restrictions. For this reason, data on a small number of the pre-specified outcomes could not be collected at midline (details in Section 2.3.2 below).

2.3 Empirical strategy

2.3.1 Treatment assignment

After baseline data collection, block randomization was used to assign each ELA club (cluster) to one of three study arms. The randomization was stratified by (a) BRAC branch office and (b) community-level depression, categorized as high or low based on whether the PHQ-8 scores were above or below the median severity among screened-in adolescents. This resulted in a total of 16 (8x2) randomization blocks. The three study arms are:

1. **Control group (36 clubs):** ELA clubs to operate as usual, with no other intervention introduced until the completion of the study.

2. **IPT-G (35 clubs):** ELA clubs to operate as usual, with a 14-week IPT-G intervention delivered by ELA club mentors trained and supported by SMU staff.

3. **IPT-G+ (35 clubs):** Same as the IPT-G intervention arm, followed by a one-time, lump-sum, unconditional cash transfer, announced and delivered after the end of therapy.[14]

2.3.2 Outcomes

The outcomes of interest are divided into two main categories: those relating to mental health and those relating to human capital accumulation. We registered a set of primary and secondary outcomes within each of these families of outcomes (Tables 1 and 2, respectively).[15] Table 1 shows the mental health outcomes. The primary mental health outcomes consist of two binary indicators: (i) having a Patient Health Questionnaire 8 (PHQ-8) score ≤ 4, which is indicative of showing no or minimal depression (Kroenke et al., 2009); and (ii) having a General Health Questionnaire 12 (GHQ-12) score < 3, which indicates one is not

[14]The study design deviates from a classical 2x2 factorial design as there is no 'cash only' treatment arm. While a 2x2 factorial design would have allowed estimating the marginal impact of therapy over cash alone, a cash-only arm was not included – given that cash transfers were not something BRAC Uganda was considering to add to their adolescent programming.

[15]The JDE Registered Report can be accessed at https://afosterri.org/jdepreresults/sample-page/.

suffering from psychological distress (Goldberg and Williams, 1988). We supplement these two indicators with five secondary outcomes: (i) The PHQ-8 score (range: 0-24); (ii) the GHQ-12 score (0-12); (iii) the score on the Rosenberg self-esteem scale (0-30) (Rosenberg, 1965); (iv) the score on the Child and Youth Resilience Measure-Revised (0-34) (Jefferies et al., 2019); and (v) the locus of control score (1-10). The discrete PHQ-8 and GHQ-12 scores allow the assessment of impact on the severity of distress in the sample, while the remaining outcomes capture several distinct dimensions of mental health (Shah et al., 2024).

The full set of human capital outcomes is shown in Table 2. The outcomes measured differ slightly by round. At the rapid resurvey, primary and secondary outcomes focused on intentions and expectations as useful predictors of subsequent investments in human capital, as it was too early to see broader human capital changes. These outcomes include life expectancy; desired fertility; educational aspirations (aspires to tertiary education), desired age of first marriage, desired age of first pregnancy, expectations of paid work at age 25; time-preferences; and the score on a set of competencies (skills), using a module developed by the investigators (Baird et al., 2019). The competencies involved making correct change during a set of hypothetical market transactions that aimed to test the respondent's numeracy, reading and listening comprehension, and ability to follow instructions.

At midline and endline, we added a number of primary and secondary outcomes that are further down the causal pathway, i.e., that provide more concrete evidence of whether or not there are knock-on effects of improved mental health on human capital accumulation. These outcomes include an indicator for being enrolled in school; the incidences of marriage and childbearing since baseline; risky sexual behavior (condom use during last sexual encounter); and self-efficacy (Schwarzer and Jerusalem, 1995).

2.3.3 Estimation

There are two main parameters of interest in this study, which we estimate separately. The first is the Intent-To-Treat (ITT) estimate of IPT-G on mental health and human capital accumulation. We obtain the parameter estimate $\hat{\tau}$ by estimating the following linear regression model on the sample restricted to the control and IPT-G groups:

$$Y_i = \alpha + \tau T_c^{Th.} + \boldsymbol{\beta}(\mathbf{x}_c - \overline{\mathbf{x}}) + \boldsymbol{\delta} T_c^{Th.}(\mathbf{x}_c - \overline{\mathbf{x}}) + \varepsilon_i \tag{1}$$

Y_i denotes outcomes Y for individual i residing in cluster c. Assignment to IPT-G ($Therapy$) at the cluster level is denoted by the indicator $T_c^{Th.}$. ε denotes an idiosyncratic error term. We estimate this specification separately in each survey round. To improve power, we pool the two treatment groups (IPT-G and IPT-G+) at the *rapid resurvey* round as both groups

had completed their therapy sessions and the cash transfers had **not** yet been announced.

The second parameter of interest is the marginal impact of adding Cash to IPT-G on the same set of outcomes. We estimate this parameter using an analogous specification in each survey round on the sample restricted to the IPT-G and IPT-G+ treatment groups:

$$Y_i = \alpha + \tau T_c^{Cash} + \boldsymbol{\beta}(\mathbf{x}_c - \overline{\mathbf{x}}) + \boldsymbol{\delta} T_c^{Cash}(\mathbf{x}_c - \overline{\mathbf{x}}) + \varepsilon_i \tag{2}$$

Assignment to IPT-G+ at the cluster level is denoted by the indicator T_c^{Cash}.

The impact estimates are identified given random assignment to treatment at the cluster level (ELA club). As randomization was block-stratified, all regression models include block fixed effects, denoted by the vector $\mathbf{x}_c$, that are centered and fully interacted with the treatment indicator (see e.g., Bruhn and McKenzie 2009; Lin 2013; Negi and Wooldridge 2021 for the practical and theoretical considerations of our chosen specification). Reported standard errors are clustered at the ELA club level. In Appendix A, we also report results from specifications that include an additional set of (pre-specified) baseline covariates at the individual level: the results are qualitatively similar and, hence, omitted from the main text.[16]

In all tables presenting impact estimates, we report standard p-values and False Discovery Rate adjusted q-values. We adjust for the False Discovery Rate (FDR) following Benjamini and Hochberg (1995), where adjustments are made within families of outcomes, i.e., primary/secondary and mental health/human capital outcomes, and within round.

3 Results

We first briefly discuss baseline balance, attrition, and treatment compliance. We then turn to treatment effects on mental health and human capital, before concluding with a short subsection that discusses the unexpected negative marginal impact of cash (over and above therapy) on mental health.

3.1 Implementation fidelity

3.1.1 Baseline balance

Table 3 provides the baseline values for the subset of primary and secondary outcomes measured at baseline, along with the set of pre-specified covariates. Overall, these variables

[16]The individual-level baseline covariates include: the poverty probability index (PPI) as a measure of wealth (Peachey, 2017), age in years, binary indicators for ever married and ever pregnant, and the PHQ-8 score.

are well-balanced at baseline across the control and treatment arms.

3.1.2 Attrition

Turning to attrition, Table 4 shows the share of study participants that were lost to follow-up by treatment arm for each round. Attrition in the control group was 13.9% at rapid resurvey. Columns 1-2 show that the level of attrition is not differential in the pooled treatment group at the rapid resurvey, our preferred specification for this round. Columns 3-4 show that the level of attrition was 3.5 percentage points (pp) lower in the IPT-G+ group — compared to control and to IPT-G.[17]

Columns 5-8 in Table 4 report attrition at midline and endline - approximately 12 and 24 months after baseline, respectively. We note that the share of study participants in the control group lost to follow-up increased to 20.5% by midline and 26.1% by endline. These levels of attrition are on par with other longitudinal studies with adolescents in Sub-Saharan Africa (e.g., Bandiera et al. 2020). The level of attrition in the IPT-G arm is always indistinguishable from that in the control group. However, attrition is lower in the combined treatment arm (IPT-G+) by 8 to 10 pp. It is possible that cash transfers induced some reciprocity in this group, which resulted in higher rates of participation in follow-up surveys.

F-tests for the joint significance of covariates and their interactions with each treatment arm, reported at the bottom of Table 4, indicate that these covariates are not prognostic of attrition and that attrition is not differential by baseline characteristics across treatment arms.[18] We report ITT effects that are **not** adjusted for attrition in the main tables. Appendix Tables A11–A12 report upper and lower bounds for the impact estimates in the IPT-G+ arm, where attrition levels are significantly lower than the other two study arms.

3.1.3 Compliance

In terms of compliance, Column 1 in Table 5 shows that no one in the control group had access to the therapy intervention. Participation rates in IPT-G in the two treatment arms were good for a community-based program targeting adolescents – 56% in the IPT-G group and 52% in the IPT-G+ group attended at least one session (this compares to 21% in Bandiera et al. (2020), for example). Conditional on attending at least one session, the average number of sessions attended was high, approximately 11 out of 14 sessions in both the IPT-G and IPT-G+ groups.[19] Figure 2 shows the cumulative distribution of attendance

[17] We remind the reader that this round of data collection took place before the announcement and disbursement of cash transfers in the combined treatment arm (IPT-G+).

[18] These coefficients, which are not presented in this table, are reported in full in Appendix Table A1.

[19] The share of participants that attended a high share of sessions is lower, however, than that reported in Bolton et al. (2003) among adults in rural Uganda. In that study, 54% of the participants attended at

in the combined treatment arms. Column 2 in Table 5 shows that no one in the control group or the IPT-G arm received cash, while 86.5% of those in the combined treatment (IPT-G+) arm received their lump-sum cash transfer. We report intention-to-treat (ITT) estimates throughout the paper, and refer the readers to Appendix Table A4 for estimates of the local average treatment effect (LATE) of IPT-G.

3.2 Treatment effects on mental health

3.2.1 Impact of IPT-G

Table 6 presents the impact of offering IPT-G on mental health.[20] Immediately following the end of IPT-G (Panel A), approximately a quarter of the control group had no or minimal depression as measured by the PHQ-8 (25.6%, column 1). This share is increased by 3.1 pp in the pooled IPT-G group, but this is not statistically significant (p-value = 0.172). The share of study participants with minimal psychological distress as measured by the GHQ-12 also increased in the IPT-G group (by 6.1 pp over a mean of also 25.6%, column 2), which is a modest and statistically significant improvement (p-value = 0.011; q-value = 0.023). The discrete PHQ-8 and GHQ-12 scores tell a similar story (columns 3 & 4): IPT-G reduced PHQ-8 scores by less than 0.1 standard deviation (SD, q = 0.590) and GHQ-12 scores by more than 0.15 SD (q = 0.069). It is possible that the participants that attended more sessions benefited more from IPT-G: Appendix Table A2 shows a positive correlation between the number of IPT-G sessions attended and psychological well-being, but we cannot ascribe a causal interpretation to this finding.

At the 12-month follow-up (Table 6 Panel B), we find that the modest but statistically significant effects of therapy on primary mental health outcomes remained: the likelihood of minimal depression was higher in the IPT-G arm (no longer pooled with the combined treatment arm of IPT-G+) by 5.4 pp over a control group mean of 18.4% using the PHQ-8 (q = 0.017) and by also 5.4 pp over a control group mean of 27.8% using the GHQ-12; q = 0.030). The reductions in the discrete scores are both less than 0.1 SD and not statistically significant. Figure 3 shows that the improvements in the scores largely occurred around the cutoff values for minimal depression, explaining the effects on the primary outcomes.[21] Table A5 presents the impact of IPT-G on binary indicators for moderate (PHQ-8≥10) and severe depression (PHQ-8≥15) in each follow-up survey round: the impact estimates are

least 14 (or 87.5%) of the 16 total sessions, compared with only 28% of the participants in our study, who attended at least 12 (or 85.7%) of the 14 total sessions.

[20] Table A3 replicates the same table with covariate adjustments.

[21] Data on other secondary outcomes were not collected during this round as the questionnaire had to be shortened for the phone survey that was implemented during the COVID-19 lockdown.

small and never statistically significant, meaning that IPT-G did not reduce moderate or severe depression in this population.

Finally, Table 6 Panel C shows that there are no effects on any of the primary or secondary mental health outcomes at the 24-month follow-up. The rates of minimal depression, as measured by the PHQ-8, appear to have bounced back from the decline during COVID-19, but the impact of therapy is now only 0.004 pp using the PHQ-8 (q = 0.889) and 0.014 using the GHQ-12 (q = 0.889). Similarly, the impact of IPT-G on either discrete score is positive, small, and not statistically significant. There are no effects on self-esteem, resilience, or locus of control at any follow-up round.

3.2.2 Impact of adding cash to IPT-G

Table 7 presents the marginal impact of providing lump-sum cash transfers, announced and disbursed soon after the completion of IPT-G (and the completion of the *rapid resurveys*), on mental health. Hence, the impacts are only analyzed at the 12- and 24-month follow-ups. At the 12-month follow-up (Panel A), i.e., approximately 6–8 months after the cash transfers, the marginal effects on the primary outcomes are large and negative: the likelihood of minimal depression is reduced by approximately 10 pp using either measurement scale (columns 1 & 2). Increases in the discrete scores are moderate, around 0.18 SD using either scale (columns 3 & 4). All of these estimates are statistically significant (q <= 0.001). At the 24-month follow-up, the negative effects remain large and statistically significant for the primary outcomes - approximately 7 pp using either scale (q = 0.025). The increases in the discrete measures are smaller and not statistically significant. While there are no effects on self-esteem and locus of control at endline, individuals in the combined therapy (IPT-G+) arm also have significantly lower resilience than those in the IPT-G arm (0.17 SD; q = 0.062). We discuss the negative impacts of cash in Section 3.4, which may be linked to the COVID-19 pandemic, and unexpected negative shocks more broadly.

3.3 Treatment effects on human capital

3.3.1 Impact of IPT-G

Assuming that the pathway to increased human capital in the treatment group is through reductions in psychological distress and/or improved self-esteem, resilience, and self-efficacy, one would not expect to see large improvements in human capital indicators, given the small effects of IPT-G on mental health reported above. However, if simply the act of participating in IPT-G plays a role in increasing human capital, we may see some effects immediately after the completion of IPT-G, especially on outcomes measuring expectations and aspirations.

Table 8 presents the impact of therapy on human capital outcomes at the *rapid resurvey*.[22] There are some effects in the expected direction, i.e., beneficial, but these are small and do not survive corrections for multiple hypothesis testing using FDR-adjusted q-values. Nonetheless, we note that individuals in the pooled IPT-G group were more patient (*time preferences*: they were 5.5pp or 11%, more likely to value receiving 90,000 Ugandan shillings now versus 110,000 Ugandan shillings in one month), more likely to expect to be doing *paid work* at age 25 (by 0.024 pp or 3%; p = 0.039, q = 0.104), and scored better on their *competencies* tests (up 8%; p = 0.078, q = 0.104).

Table 9 turns to the effects of therapy on human capital outcomes at the 12- and the 24-month follow-up surveys. At the 12-month follow-up (Panel A), there are small effects on a number of primary and secondary outcomes. The incidence of marriage since baseline decreased by 0.025 pp or 30% (p = 0.042, q = 0.106) and there was a sizeable increase in the likelihood of being enrolled in school (0.075 pp or 23%; p = 0.021, q = 0.104). Desired fertility declined by approximately 0.2 SD (q = 0.001) and individuals in the IPT-G arm showed more patience (time preferences; q = 0.095). These modest effects of IPT-G on human capital accumulation at the 12-month follow-up are consistent with the IPT-G effects on mental health presented in Panel B of Table 6. By endline (Panel B), the impacts on marriage and desired fertility had dissipated, while the estimates for enrollment and time preferences remained similar to midline but were no longer statistically significant (all FDR-adjusted q-values >= 0.143). We note that the 12-month follow-up surveys were conducted by phone due to the COVID-19 pandemic (as opposed to in person for the rest of the data collection rounds), so the difference in the impact of IPT-G on human capital between the 12- and the 24-month follow-ups could be in part due to differences in data collection methods.

3.3.2 Impact of adding cash to IPT-G

Finally, Table 10 presents the marginal impact of providing cash transfers over and above the therapy intervention on human capital outcomes at the 12- and 24-month follow-up surveys. Consistent with the fact that the mental health effects of cash were negative (compared to the IPT-G arm), individuals in the IPT-G+ arm were less likely to be enrolled in school, had higher desired fertility, and lower expectations of being in paid work at age 25. Most marginal impact estimates are not statistically significant, but it is clear that the addition of lump-sum cash transfers to IPT-G was not an effective intervention. While we focused on the marginal effects of cash over IPT-G here, we also note that outcomes (mental health or

[22]The set of outcomes at the *rapid resurvey* differ from those for later rounds. As it was deemed unlikely for human capital accumulation to have materialized so shortly after the therapy, data on outcomes that may be prognostic of future investments in human capital were collected in this round.

human capital) were **not** improved in the combined treatment (IPT-G+) arm when compared with the control group, either.[23]

3.4 Why are there negative impacts of cash?

As motivated in the introduction, we hypothesized that the marginal impacts of the cash transfer might be positive on both mental health and human capital outcomes. But, instead, we find large and statistically significant negative impacts of cash on minimal depression that persist until endline. We also see that cash unravels the impacts of the therapy on school enrollment, desired fertility, and expectations of paid work. We hypothesize that this adverse finding is linked to the timing of the transfer in relation to an unexpected negative shock, as the cash was distributed immediately prior to the onset of the COVID-19 pandemic. We provide some exploratory analysis to support this explanation.

Descriptive statistics from our data show that 83% of the sample in the IPT-G+ arm at the 12-month follow-up survey reported that cash helped them during the pandemic, largely to support their families and buy food. However, 50% also said that COVID-19 impacted how they spent the money, and 81% felt they had to give at least some of the cash to their family and friends. Many had hoped to start a business or support schooling but had to divert the money to essential needs for self and family. One adolescent noted: "I had planned to start a business, however I was inclined to spend part of the money to feed my family during social containment." Another one said: "I wanted to start up a business of selling fruit but when the Corona pandemic arrived and the lockdown, I used it for buying food for my guardians who were not working anymore and the situation had gotten difficult." Hence, there is a sense in which cash transfers may have increased aspirations, but ended up becoming a source of frustration to the adolescent beneficiaries when their families became reliant on them for basic necessities during (at least the early stages of) the pandemic. This is similar to the finding in Baird et al. (2013), where being the target beneficiary of a cash transfer program that is providing a non-negligible sum of money for the household can become a burden for adolescents and increase their psychological distress. This finding is also consistent with a recent evaluation of a cash transfer program trialed in Oakland, California, which finds overwhelmingly zero or negative impacts on outcomes and suggests that "...the windfall made participants' (unmet) needs more salient, which caused distress" (Jaroszewicz et al., 2022).

Quantitative survey data also support this interpretation when we examine the adolescent's own response to COVID-19, as well as their perception of their household's response to it. Table 11 shows the impacts on a set of outcomes regarding how the respondent and their

[23]Impact estimates with covariate adjustments for Table 8, Table 9, and Table 10 can be seen in Appendix Tables A7, A8, and A9. Impact findings remain qualitatively the same.

household coped with the COVID-19 crisis, comparing the IPT-G+ and IPT-G only groups (note that there were no significant differences between IPT-G and control, see Table A10). Assignment to the combined treatment (IPT-G+) arm increased the likelihood that the adolescent got angry more quickly by 8.8 pp (Column 1, q = 0.006) and increased stress in the household by 4.9 pp (Column 5, p = 0.079, q = 0.236). These impacts persisted and, if anything, got worse by the 24-month follow-up.

4 Conclusion

Given the enormous burden mental disorders take on young people globally, it is critical to find low-cost scalable solutions to both prevent and treat mental illness. Group-based therapy is a strong candidate for treatment at scale in low-resource settings, but evidence beyond immediate impacts largely remains elusive. Our findings add to this evidence base by showing 12-month modest improvements of 20%-30% in rates of minimal depression for adolescents assigned to IPT-G, with these effects completely dissipating by the 24-month follow-up. We similarly find small short-term impacts on school enrollment, delayed marriage, desired fertility and time preferences, but fail to conclude that these effects persist two years after therapy. These findings suggest that better mental health can cause concurrent improvements in well-being more broadly, but they also point to the need to identify interventions with larger effects on the mental health of adolescents to realize the potential for sustained knock-on effects on human capital. A one-time lump-sum cash transfer following therapy did not provide any additional benefit and, in fact, had negative effects, likely linked to the COVID-19 pandemic. Our study adds to a growing body of literature suggesting that temporary cash transfers do not lead to sustained improvements in mental health, even when they are combined with mental health interventions.

Unfortunately, the IPT-G impacts on depression in this trial are too small to pass a cost-effectiveness test. We estimate the cost of the program to have been approximately USD 48 per individual offered the program (the cost per attendee was closer to USD 88). Given impact estimates of a reduction in the prevalence of mild depression of 0.054 pp for a period of one year, it implies that the cost of the program per case of depression averted was nearly USD 916, or 2,670 in 2019 PPP terms. An oft-cited reference point estimates that a health intervention can be considered cost-effective if it costs approximately one to three times the GDP per capita of the relevant country per Disability Adjusted Life Year (DALY) averted (Kazibwe et al., 2022; Robinson et al., 2017). We can then convert a case of mild depression averted into its DALY equivalent using the disability weights calculated for the Global Burden of Disease, which equates one year of mild depression to 0.145 DALYs

(Salomon et al., 2012, 2015). This implies that ultimately the program cost USD PPP (2019) 18,413 per DALY averted. Since Uganda had a GDP per capita USD PPP (2019) of 2,345, the IPT-G intervention cannot be considered cost-effective using this benchmark.

Given significant and large short-term effects found in a previous study of IPT-G in Uganda which examined the use of IPT-G to treat depression in adults with trained lay facilitators (Bolton et al., 2003),[24] it is worth exploring possible explanations for both the smaller than expected short-term impacts of IPT-G on mental health, and lack of longer-term effects found in this study. First, and most obvious, is the timing of the intervention in relation to the COVID-19 pandemic, with therapy finishing in late 2019, a few months before the onset of the pandemic. The pandemic was a large and unprecedented global negative shock that may have simply been too catastrophic for group therapy to overcome. Second, there was a high rate of recovery in the control group – approximately a quarter of the adolescents in the control group did not suffer from depression or psychological distress at 24-months, a finding also noted in other studies of adults (e.g., Baranov et al. (2020), Bhat et al. (2022), and Bolton et al. (2003)). This finding points to a critical role for improved targeting of mental health interventions: further research is needed to understand how screening through a traditional tool like the PHQ-8 could be improved through a combination of other methods - such as better locally-adapted screening tools (Carvajal-Velez et al., 2023), children's drawings (Baird et al., 2022), and risk prediction models (Rocha et al., 2021; Brathwaite et al., 2021). Finally, this evaluation was of a first attempt by StrongMinds to provide IPT-G to adolescents and to work through partner organizations. Lessons learned from this study combined with broader internal monitoring and evaluation led them to substantially alter their approach for treating adolescents at scale (StrongMinds, 2023b). This includes treating in-school and out-of-school adolescents separately, using teachers instead of peer-age mentors to lead IPT-G sessions, and more intensive training. Further research is needed to assess the impact of this revised model.

Overall, this paper highlights the challenge of tackling mental health at scale, particularly for adolescents in LMICs. While we continue to find evidence that adolescent programming — both mental health specific and otherwise — can improve mental health in the short

[24]IPT-G has been tested using RCTs in Uganda more than 20 years ago with very promising short-term results. Bolton et al. (2003) found large reductions in depression and dysfunction among adults in rural Uganda **two weeks** after the completion of IPT-G. However, in addition to the two decades that have passed since that intervention, there are important differences between their study and ours in *target population* (adult males and females in rural Uganda vs. adolescent females); *targeting* (using a locally adapted Hopkins symptom checklist among the subset of adults in study clusters who were believed to have depression-like illness vs. using PHQ-8 to screen in all adolescent females in the study areas); *follow-up duration* (Bolton et al. (2003) do not report longer-term effects); and *take-up of IPT-G* (54% of the participants attending at least 14 of the 16 sessions in the Bolton et al. (2003) study compared with 28% attending 12 of the 14 sessions in this study).

term, effect sizes are often small (Shah et al., 2024) and, even when large, not sustained over time (Baird et al., 2013). As programming to address the substantial mental health needs of adolescent girls continues to evolve in LMICs, implementers and researchers must ensure that they consider the age-, gender-, and context-specific needs of this group in terms of measurement, targeting, and broader program design.

5 Acknowledgements

We thank colleagues at StrongMinds, StrongMinds Uganda, BRAC USA and BRAC Uganda for their collaboration on this project. We thank seminar and conference participants at the University of Pennsylvania HP/CHIBE seminar series, 2020 AEA Annual Meeting, and the 2021 International Conference on Development Economics. We thank everyone who provided this project with great fieldwork and research assistance and are too numerous to list individually. We thank the JDE Pre-Results Review process for feedback early on in this study that improved our study design. Most importantly, we are so thankful to the young people, who generously shared their time and experiences for the purpose of this research. We gratefully acknowledge funding from Wellspring, CEGA, and the J-PAL Gender and Economic Agency Initiative (GEA). Ethical review committees at Makerere University Higher Degrees, Research and Ethics Committee (Uganda, Protocol 552), Uganda National Council for Science and Technology (Uganda, Protocol HS318ES), and George Washington University (USA, Protocol 180580) approved the study design. The trial is registered at AEA RCT Registry (AEARCTR-0004208) and ClinicalTrials.gov(NCT03966833). The findings, interpretations, and conclusions expressed are entirely those of the authors.

References

Baird, S., De Hoop, J., and Özler, B. (2013). Income shocks and adolescent mental health. *Journal of Human Resources*, 48(2):370–403.

Baird, S., McIntosh, C., and Özler, B. (2019). When the money runs out: Do cash transfers have sustained effects on human capital accumulation? *Journal of Development Economics*, 140:169–185.

Baird, S., Panlilio, R., Seager, J., Smith, S., and Wydick, B. (2022). Identifying psychological trauma among Syrian refugee children for early intervention: analyzing digitized drawings using machine learning. *Journal of Development Economics*, 156:102822.

Bandiera, O., Buehren, N., Burgess, R., Goldstein, M., Gulesci, S., Rasul, I., and Sulaiman, M. (2020). Women's empowerment in action: evidence from a randomized control trial in Africa. *American Economic Journal: Applied Economics*, 12(1):210–259.

Baranov, V., Bhalotra, S., Biroli, P., and Maselko, J. (2020). Maternal depression, women's empowerment, and parental investment: Evidence from a randomized controlled trial. *American Economic Review*, 110(3):824–59.

Benjamini, Y. and Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, 57(1):289–300.

Bergstrom, K. and Özler, B. (2023). Improving the well-being of adolescent girls in developing countries. *The World Bank Research Observer*, 38(2):179–212.

Bhat, B., de Quidt, J., Haushofer, J., Patel, V. H., Rao, G., Schilbach, F., and Vautrey, P.-L. P. (2022). The long-run effects of psychotherapy on depression, beliefs, and economic outcomes. Working Paper 30011, National Bureau of Economic Research.

Blanshe, M. and Dahir, A. L. (2022). Uganda reopens schools after world's longest covid shutdown. *The New York Times, January 10, 2022.*

Blattman, C., Chaskel, S., Jamison, J. C., and Sheridan, M. (2023). Cognitive behavioral therapy reduces crime and violence over ten years: Experimental evidence. *American Economic Review: Insights*, 5(4):527–45.

Bolton, P., Bass, J., Neugebauer, R., Verdeli, H., Clougherty, K. F., Wickramaratne, P., Speelman, L., Ndogoni, L., and Weissman, M. (2003). Group interpersonal psychotherapy for depression in rural Uganda: a randomized controlled trial. *JAMA: Journal of the American Medical Association*, 289(23):3117–3124.

Bossuroy, T., Goldstein, M., Karimou, B., Karlan, D., Kazianga, H., Parienté, W., Premand, P., Thomas, C. C., Udry, C., Vaillant, J., and Wright, K. A. (2022). Tackling psychosocial and capital constraints to alleviate poverty. *Nature*, 605:291–297.

Bowlby, J. (1969). *Attachment and Loss.* London: Hogarth.

Bowlby, J. (1973). *Attachment and Loss. Volume II. Separation, Anxiety and Anger.* London: Penguin Books.

Brathwaite, R., Rocha, T. B.-M., Kieling, C., Gautam, K., Koirala, S., Mondelli, V., Kohrt, B., and Fisher, H. L. (2021). Predicting the risk of depression among adolescents in Nepal using a model developed in Brazil: the IDEA Project. *European Child & Adolescent Psychiatry*, 30:213–223.

Bruhn, M. and McKenzie, D. (2009). In pursuit of balance: Randomization in practice in development field experiments. *American Economic Journal: Applied Economics*, 1(4):200–232.

Carvajal-Velez, L., Ahs, J. W., Requejo, J. H., Kieling, C., Lundin, A., Kumar, M., Luitel, N. P., Marlow, M., Skeen, S., Tomlinson, M., et al. (2023). Measurement of mental health among adolescents at the population level: A multicountry protocol for adaptation and validation of mental health measures. *Journal of Adolescent Health*, 72(1):S27–S33.

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P., and Saxena, S. (2016). Scaling-up treatment of depression and anxiety: a global return on investment analysis. *The Lancet Psychiatry*, 3(5):415–424.

Cuijpers, P., Donker, T., Weissman, M. M., Ravitz, P., and Cristea, I. A. (2016). Interpersonal psychotherapy for mental health problems: a comprehensive meta-analysis. *American Journal of Psychiatry*, 173(7):680–687.

Cuijpers, P., Geraedts, A. S., van Oppen, P., Andersson, G., Markowitz, J. C., and van Straten, A. (2011). Interpersonal psychotherapy for depression: a meta-analysis. *American Journal of Psychiatry*, 168(6):581–592.

Currie, J. and Stabile, M. (2006). Child mental health and human capital accumulation: the case of ADHD. *Journal of Health Economics*, 25(6):1094–1118.

DiClemente, R. J., Wingood, G. M., Crosby, R. A., Sionean, C., Brown, L. K., Rothbaum, B., Zimand, E., Cobb, B. K., Harrington, K., and Davies, S. (2001). A prospective study of psychological distress and sexual risk behavior among black adolescent females. *Pediatrics*, 108(5):e85–e85.

Eisenberg, D., Golberstein, E., and Hunt, J. B. (2009). Mental health and academic success in college. *The BE Journal of Economic Analysis & Policy*, 9(1).

Evans, G. W., Kim, P., Ting, A. H., Tesher, H. B., and Shannis, D. (2007). Cumulative risk, maternal responsiveness, and allostatic load among young adolescents. *Developmental Psychology*, 43(2):341.

Fishbein, D. H., Herman-Stahl, M., Eldreth, D., Paschall, M. J., Hyde, C., Hubal, R., Hubbard, S., Williams, J., and Ialongo, N. (2006). Mediators of the stress–substance–use relationship in urban male adolescents. *Prevention Science*, 7:113–126.

Fletcher, J. M. (2008). Adolescent depression: diagnosis, treatment, and educational attainment. *Health Economics*, 17(11):1215–1235.

Frank, E. and Levenson, J. C. (2011). *Interpersonal Psychotherapy.* American Psychological Association.

GBD 2019 Mental Disorders Collaborators (2022). Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Psychiatry*, 9(2):137–150.

Goldberg, D. and Williams, P. (1988). General Health Questionnaire.

Guthold, R., Johansson, E. W., Mathers, C. D., and Ross, D. A. (2021). Global and regional levels and trends of child and adolescent morbidity from 2000 to 2016: an analysis of years lost due to disability. *BMJ Global Health*, 6(3):e004996.

Hardaway, C. R. and Smalls, C. (2009). Poverty and socioeconomic disadvantage in adolescence. *Handbook of Adolescent Psychology, Volume 2: Contextual Influences on Adolescent Development*, 2:444.

Haushofer, J., Larreboure, M., Lowes, S., and Mait, L. (2023a). Cash transfers and social preferences of children. Working Paper 31720, National Bureau of Economic Research.

Haushofer, J., Mudida, R., and Shapiro, J. (2023b). The comparative impact of cash transfers and a psychotherapy program on psychological and economic well-being. Working paper.

Horowitz, J. L. and Manski, C. F. (2000). Nonparametric analysis of randomized experiments with missing covariate and outcome data. *Journal of the American Statistical Association*, 95(449):77–84.

Jaroszewicz, A., Jachimowicz, J., Hauser, O., and Jamison, J. (2022). Cash can make its absence felt: Randomizing unconditional cash transfer amounts in the U.S. Working paper.

Jefferies, P., McGarrigle, L., and Ungar, M. (2019). The CYRM-R: A rasch-validated revision of the child and youth resilience measure. *Journal of Evidence-Based Social Work*, 16(1):70–92.

Kazibwe, J., Gheorghe, A., Wilson, D., Ruiz, F., Chalkidou, K., and Chi, Y.-L. (2022). The use of cost-effectiveness thresholds for evaluating health interventions in low-and middle-income countries from 2015 to 2020: a review. *Value in Health*, 25(3):385–389.

Kessler, R. C., Foster, C. L., Saunders, W. B., and Stang, P. E. (1995). Social consequences of psychiatric disorders, i: Educational attainment. *The American journal of Psychiatry*, 152(7):1026–1032.

Kidd, S. and Tran, A. (2017). Social pensions and their contribution to economic growth. *Report published by the Ministry of Gender, Labour and Social Development of the Republic of Uganda and the Expanding Social Protection Programme*.

Klerman, G., Weissman, M., Rounsavilie, B., et al. (1984). *Interpersonal Psychotherapy of Depression*. New York: Basic Books.

Kling, J. R., Liebman, J. B., and Katz, L. F. (2007). Experimental analysis of neighborhood effects. *Econometrica*, 75(1):83–119.

Kroenke, K., Strine, T. W., Spitzer, R. L., Williams, J. B., Berry, J. T., and Mokdad, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*, 114(1-3):163–173.

Lee, D. S. (2009). Training, wages, and sample selection: Estimating sharp bounds on treatment effects. *Review of Economic Studies*, 76(3):1071–1102.

Lin, W. (2013). Agnostic notes on regression adjustments to experimental data: Reexamining Freedman's critique. *The Annals of Applied Statistics*, pages 295–318.

Lipsitz, J. D. and Markowitz, J. C. (2013). Mechanisms of change in interpersonal therapy (IPT). *Clinical Psychology Review*, 33(8):1134–1147.

Lund, C., De Silva, M., Plagerson, S., Cooper, S., Chisholm, D., Das, J., Knapp, M., and Patel, V. (2011). Poverty and mental disorders: breaking the cycle in low-income and middle-income countries. *The Lancet*, 378(9801):1502–1514.

Lund, C., Orkin, K., Witte, M., Davies, T., Walker, J., Haushofer, J., Murray, S., Bass, J., Murray, L., and Patel, V. (2022). Treating mental health conditions improves labor market and other economic outcomes in low and middle-income countries. Working paper.

Maselko, J., Sikander, S., Turner, E. L., Bates, L. M., Ahmad, I., Atif, N., Baranov, V., Bhalotra, S., Bibi, A., Bibi, T., et al. (2020). Effectiveness of a peer-delivered, psychosocial

intervention on maternal depression and child development at 3 years postnatal: a cluster randomised trial in Pakistan. *The Lancet Psychiatry*, 7(9):775–787.

McKelway, M., Banerjee, A., Grela, E., Schilbach, F., Sequeira, M., Sharma, G., Vaidyanathan, G., and Duflo, E. (2023). Effects of cognitive behavioral therapy and cash transfers on older persons living alone in India. *Annals of Internal Medicine*, 176(5):632–641. PMID: 37094349.

Morris, J. (2012). Interpersonal psychotherapy in child and adolescent mental health services. *Clinical Psychology & Psychotherapy*, 19(2):141–149.

Mufson, L. (2004). *Interpersonal Psychotherapy for Depressed Adolescents*. Guilford Press.

National Institute of Health and Clinical Excellence (2005). Clinical guideline CG28 depression in children and young people.

Negi, A. and Wooldridge, J. M. (2021). Revisiting regression adjustment in experiments with heterogeneous treatment effects. *Econometric Reviews*, 40(5):504–534.

Patel, V., Flisher, A. J., Hetrick, S., and McGorry, P. (2007). Mental health of young people: a global public-health challenge. *The Lancet*, 369(9569):1302–1313.

Patel, V. and Kleinman, A. (2003). Poverty and common mental disorders in developing countries. *Bulletin of the World Health Organization*, 81:609–615.

Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., Chisholm, D., Collins, P. Y., Cooper, J. L., Eaton, J., et al. (2018). The lancet commission on global mental health and sustainable development. *The Lancet*, 392(10157):1553–1598.

Peachey, J. (2017). Announcing our new and improved PPI construction methodology. Blog post: https://www.povertyindex.org/blog/new-ppi-construction-methodology.

Ridley, M., Rao, G., Schilbach, F., and Patel, V. (2020). Poverty, depression, and anxiety: Causal evidence and mechanisms. *Science*, 370(6522):eaay0214.

Robinson, L. A., Hammitt, J. K., Chang, A. Y., and Resch, S. (2017). Understanding and improving the one and three times GDP per capita cost-effectiveness thresholds. *Health Policy and Planning*, 32(1):141–145.

Rocha, T. B.-M., Fisher, H. L., Caye, A., Anselmi, L., Arseneault, L., Barros, F. C., Caspi, A., Danese, A., Goncalves, H., Harrington, H. L., et al. (2021). Identifying adolescents

at risk for depression: a prediction score performance in cohorts based in 3 different continents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(2).

Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton University Press.

Rosselló, J., Bernal, G., and Rivera-Medina, C. (2012). Individual and group CBT and IPT for Puerto Rican adolescents with depressive symptoms. *Journal of Latinx Psychology*, 14(3):36–51.

Salomon, J. A., Haagsma, J. A., Davis, A., de Noordhout, C. M., Polinder, S., Havelaar, A. H., Cassini, A., Devleesschauwer, B., Kretzschmar, M., Speybroeck, N., et al. (2015). Disability weights for the Global Burden of Disease 2013 study. *The Lancet Global Health*, 3(11):e712–e723.

Salomon, J. A., Vos, T., Hogan, D. R., Gagnon, M., Naghavi, M., Mokdad, A., Begum, N., Shah, R., Karyana, M., Kosen, S., et al. (2012). Common values in assessing health outcomes from disease and injury: disability weights measurement study for the Global Burden of Disease Study 2010. *The Lancet*, 380(9859):2129–2143.

Saxena, S., Thornicroft, G., Knapp, M., and Whiteford, H. (2007). Resources for mental health: scarcity, inequity, and inefficiency. *The lancet*, 370(9590):878–889.

Schwarzer, R. and Jerusalem, M. (1995). Generalized self-efficacy scale. In Johnston, M., Wright, S., and Weinman, J., editors, *Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs*, volume 35, page 37.

Shah, M., Baird, S., Seager, J., Avuwadah, B., Hamory, J., Sabarwal, S., and Vyas, A. (2024). Improving mental health of adolescent girls in low-and middle-income countries: Causal evidence from life skills programming. *Journal of Human Resources*, 59(S):S317–S364.

Singla, D., BA, K., LK, M., A, A., BF, C., and V., P. (2017). Psychological treatments for the world: Lessons from low- and middle-income countries. *Annual Review of Clinical Psychology*, 13(May 8):149–181.

Sowislo, J. F. and Orth, U. (2013). Does low self-esteem predict depression and anxiety? a meta-analysis of longitudinal studies. *Psychological Bulletin*, 139(1):213.

Stein, M. B. and Kean, Y. M. (2000). Disability and quality of life in social phobia: epidemiologic findings. *American Journal of Psychiatry*, 157(10):1606–1613.

StrongMinds (2023a). Are lay counselors the next frontier in global mental health? Blog post: https://strongminds.org/are-lay-counselors-the-next-frontier-in-global-mental-health/.

StrongMinds (2023b). Q4 2023 report: https://strongminds.org/wp-content/uploads/2024/03/2023-q4-report-8.5x11-03-28-24-final.pdf. Technical report.

Sullivan, H. S. (1940). Conceptions of modern psychiatry: The first William Alanson White memorial lectures. *Psychiatry*, 3(1):1–117.

Van Ginneken, N., Tharyan, P., Lewin, S., Rao, G. N., Meera, S., Pian, J., Chandrashekar, S., and Patel, V. (2013). Non-specialist health worker interventions for the care of mental, neurological and substance-abuse disorders in low-and middle-income countries. *Cochrane Database of Systematic Reviews*, (11).

Weissman, M., J.C., M., and Klerman, G. L. (2000). *Comprehensive Guide to Interpersonal Psychotherapy.* New York: Basic Books.

Weissman, M. M. (2020). Interpersonal psychotherapy: history and future. *American Journal of Psychotherapy*, 73(1):3–7.

World Health Organization (2015). *mhGAP Humanitarian Intervention Guide (mhGAP-HIG): Clinical Management of Mental, Neurological and Substance Use Conditions in Humanitarian Emergencies*.

World Health Organization (2019). *mhGAP Humanitarian Intervention Guide (mhGAP-HIG) - Version 2.0*.

6 Figures

Figure 1: Study Timeline

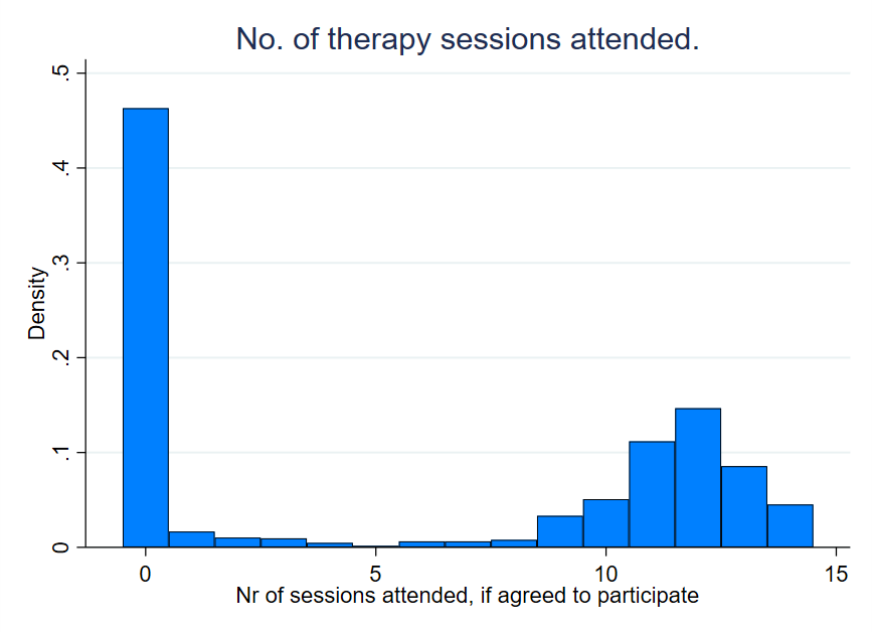

Figure 2: Attendance, cumulative density.

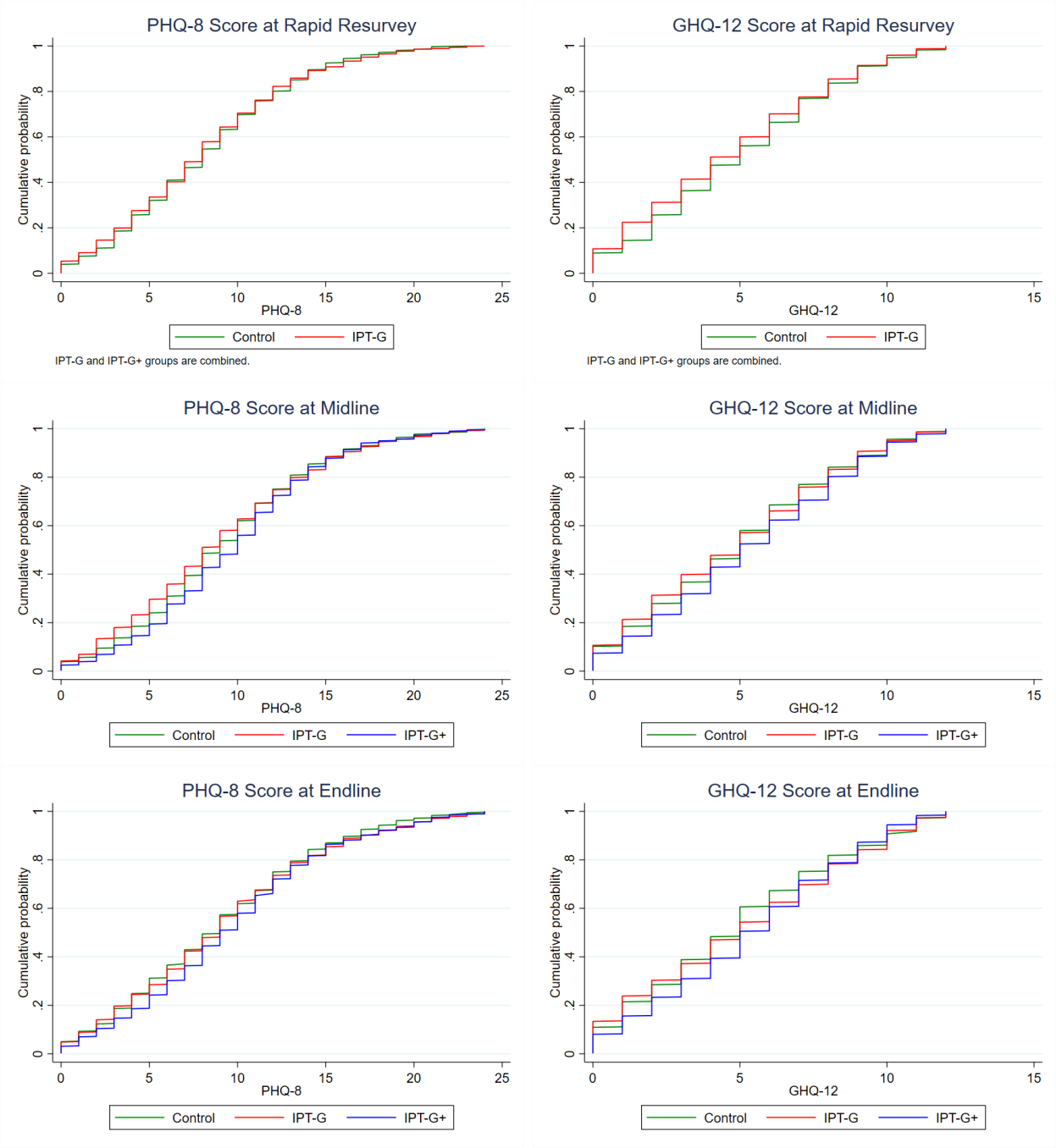

Figure 3: Cumulative distribution of mental health indicator scores.

7 Tables

Table 1: Mental health outcomes and category at each survey round.

Outcome	**Definition**	**Rapid Resurvey**	**Midline**	**Endline**
= 1 if Minimal Depression	PHQ-8$\leq$ 4	Primary	Primary	Primary
= 1 if does not suffer from psychological distress	GHQ-12$<$ 3	Primary	Primary	Primary
Score on PHQ-8	Continuous score (0-24)	Secondary	Secondary	Secondary
Score on GHQ-12	Continuous score (0-12)	Secondary	Secondary	Secondary
Self-Esteem	Score on Rosenberg Self-Esteem Scale $(0-30)$	Secondary	Secondary*	Secondary
Resilience	Score on the Child and Youth Resilience Measure-Revised (0-34)	Secondary	Secondary*	Secondary
Locus of control	On a scale of $1-10$, how much control do they feel they have over their lives	Secondary	Secondary*	Secondary

Notes: $*$ these outcomes were not measured during the midline survey because it was implemented over the phone instead of face-to-face given restrictions due to COVID-19, and thus had to be significantly shortened.

Table 2: Human capital outcomes and category at each survey round.

Outcome	**Definition**	**Rapid Resurvey**	**Midline**	**Endline**
Desired Fertility	Desired number of children at time of survey	Primary	Secondary	Secondary
Time preferences	=1 if prefers 110,000 Uganda Shs one month from now vs. 90,000 today	Primary	Secondary	Secondary
Expectations of paid work	Probability (0-10) of engaging in paid work at age 25	Primary	Secondary	Secondary
Skill-based Competencies	Total score (0-3) on set of questions on ability to make change that test numeracy and literacy	Primary	Primary†	Primary
Life Expectancy	Number (0-10) of 10 young women just like respondent alive at 40	Secondary	-	-
Education Aspirations	Aspires to complete tertiary schooling*	Secondary	-	-
Desired age of first pregnancy	Wants to be pregnant within the next 5 years (1 if already pregnant)*	Secondary	-	-
Desired age of first marriage	Wants to get married within the next 5 years (1 if already married)*	Secondary	-	-
Risky Sex	=1 if no condom use at last sex	-	Primary	Primary
Incidence of marriage	Change in ever married since baseline	-	Primary	Primary
Incidence of pregnancy	Change in ever pregnant since baseline	-	Primary	Primary
School enrollment	=1 if Enrolled in School+	-	Primary	Primary
Self-Efficacy	Score on Self-Efficacy Scale (10-40)	-	Primary	Primary

Notes: $*$ Outcome is slightly different from the one that was pre-specified; + The enrollment variable is defined as enrolled in school or enrolled when school was last in session if not currently in session, or has completed secondary schooling; † the competencies score could not be measured at midline because the survey was implemented over the phone because of restrictions due to COVID-19.

Table 3: Balance at baseline.

Variable	(1) **Control** Mean/(SE)	(2) **IPT-G** Mean/(SE)	(3) **IPTG+** Mean/(SE)	(4) Diff.(2-1) p-value	(5) Diff.(3-1) p-value	(6) Diff.(2-3) p-value
PHQ-8 Score (0-24)	13.180	13.166	13.243	0.965	0.970	0.958
	(0.146)	(0.134)	(0.174)			
GHQ-12 Score (0-12)	7.106	7.138	7.266	0.763	0.518	0.395
	(0.172)	(0.143)	(0.175)			
Rosenberg Self Esteem Score (0–40)	16.414	16.324	16.104	0.428	0.253	0.313
	(0.226)	(0.225)	(0.194)			
Child&Youth Resilience Score (17-51)	42.346	41.764	42.423	0.228	0.842	0.055
	(0.397)	(0.350)	(0.317)			
Age in years	16.769	16.741	16.761	0.832	0.950	0.637
	(0.114)	(0.103)	(0.104)			
Poverty Probability Index (0–100)	56.180	57.577	56.566	0.088	0.533	0.356
	(0.575)	(0.635)	(0.577)			
=1 if Ever Married	0.144	0.130	0.114	0.478	0.146	0.458
	(0.015)	(0.018)	(0.013)			
=1 if Ever Pregnant	0.196	0.192	0.165	0.876	0.263	0.302
	(0.018)	(0.022)	(0.016)			
Core Competencies Score (0–4)	1.299	1.300	1.327	0.985	0.583	0.745
	(0.073)	(0.069)	(0.072)			
=1 if Enrolled in School	0.420	0.436	0.396	0.724	0.321	0.156
	(0.020)	(0.027)	(0.023)			
=1 if Risky Sex	0.170	0.172	0.184	0.991	0.425	0.400
	(0.015)	(0.015)	(0.019)			
F-test of joint significance (P-value)				0.343	0.695	0.109

Notes: This table shows balance across treatment arms for the primary outcomes, select secondary outcomes, and baseline characteristics; F-test of joint significance tests the joint significance of the full set of coefficients from a linear regression of the balance variables on a treatment indicator estimated on the subsample including the two relevant groups.

Table 4: Attrition by treatment.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Rapid Resurvey *Immediate post-intervention*				**Midline** *12 months*		**Endline** *24 months*	
IPT-G (Any)	-0.018	-0.018						
	(0.014)	(0.014)						
IPT-G			0.001	0.001	0.004	0.006	-0.007	-0.009
			(0.015)	(0.015)	(0.019)	(0.019)	(0.023)	(0.023)
IPT-G+			-0.035	-0.035	-0.087	-0.084	-0.097	-0.101
			(0.014)	(0.014)	(0.014)	(0.014)	(0.021)	(0.021)
Control mean	0.139	0.139	0.139	0.139	0.205	0.205	0.261	0.261
Observations	1919	1919	1919	1919	1919	1919	1695	1695
Covariates	No	Yes	No	Yes	No	Yes	No	Yes
t-tests p-value								
H0: IPT-G (any)=0	0.188	0.183						
H0: IPT-G=0			0.965	0.974	0.838	0.748	0.754	0.687
H0: IPT-G+=0			0.015	0.016	0.000	0.000	0.000	0.000
H0: IPT-G=IPT-G+			0.012	0.011	0.000	0.000	0.000	0.000
F-tests of joint orthogonality - p value								
H0: Controls=0		0.492		0.499		0.302		0.888
H0: IPT-G (any) int.=0		0.403						
H0: IPT-G int.=0				0.201		0.136		0.506
H0: IPT-G+ int.=0				0.827		0.218		0.113

Notes: This table shows the impact of treatment on attrition in each survey round; Columns 1-2 combine the IPT-G and IPT-G+ treatment arms because the cash was distributed after the rapid resurvey; Estimates are obtained by regressing an attrition indicator on treatment indicators and block fixed effects centered and fully interacted with treatment, adjusted models also include centered baseline covariates fully interacted with the treatment indicator(s), covariates include the poverty probability score, age in years, ever married, ever pregnant, and the PHQ-8 score; Standard errors clustered at the club level in parentheses; t-tests report p-values from the indicated null hypothesis on the treatment coefficients; F-tests report p-values from tests of the joint significance of the full set of indicated coefficients (the in rows marked *int.* refer to the full set of covariate interactions with the indicated treatment).

Table 5: Compliance with treatment assignment.

	(1) **Attended Therapy** *at least one session*	(2) **Received Cash**
IPT-G	0.559	0.000
	(0.034)	(0.000)
IPT-G+	0.516	0.865
	(0.030)	(0.016)
Control mean	0.000	0.000
Observations	1913	1914
t-tests (p value)		
H0: IPT-G=0	0.000	.
H0: IPT-G+=0	0.000	0.000
H0: IPT-G = IPT-G+	0.343	0.000

Notes: This table shows the impact of treatment on compliance with treatment assignment; Estimates obtained by regressing compliance on treatment indicators; Standard errors are clustered at the club level in parentheses.

Table 6: Impact of therapy on mental health outcomes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary *Minimal depression*		**Secondary** *Discrete scores*				
	=1 if PHQ8≤4	=1 if GHQ12<3	PHQ8	GHQ12	Self-Esteem	Resilience	Locus of control
Panel A: Rapid Resurvey (immediate post-intervention)							
IPT-G	0.031	0.061	-0.354	-0.484	-0.037	0.078	0.059
	(0.022)	(0.024)	(0.297)	(0.193)	(0.175)	(0.265)	(0.136)
Control mean	0.256	0.256	8.198	5.002	17.755	43.136	5.123
Control SD	0.437	0.437	4.842	3.166	3.599	4.789	3.242
Observations	1669	1669	1669	1669	1610	1608	1610
H0: IPT-G=0 p-values	0.172	0.011	0.236	0.014	0.833	0.770	0.664
FDR adj. q-values	0.172	0.023	0.590	0.069	0.833	0.833	0.833
Panel B: Midline (12 months follow-up)							
IPT-G	0.054	0.054	-0.404	-0.181	-	-	-
	(0.020)	(0.024)	(0.277)	(0.170)			
Control mean	0.184	0.278	9.226	4.900	-	-	-
Control SD	0.388	0.449	5.137	3.235			
Observations	1001	1001	1001	1001			
H0: IPT-G=0 p-values	0.009	0.030	0.149	0.293	-	-	-
FDR adj. q-values	0.017	0.030	0.293	0.293			
Panel C: Endline (24 months follow-up)							
IPT-G	0.004	0.014	0.275	0.222	-0.085	0.094	-0.185
	(0.027)	(0.027)	(0.437)	(0.226)	(0.224)	(0.304)	(0.107)
Control mean	0.248	0.285	8.919	4.935	13.111	43.454	6.075
Control SD	0.432	0.452	5.529	3.482	3.163	5.292	2.838
Observations	901	884	901	884	873	833	882
H0: IPT-G=0 p-values	0.889	0.597	0.532	0.329	0.704	0.759	0.088
FDR adj. q-values	0.889	0.889	0.759	0.759	0.759	0.759	0.441

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary mental health outcomes, comparing the control group to the IPT-G only group; The full sample is used in Panel A as the Cash treatment arm was implemented after the Rapid Resurvey; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for the primary outcomes, indicators for whether the PHQ-8 score is ≤ 4 or the GHQ-12 score is < 3; Columns 3-7 show results for the secondary outcomes, the PHQ-8 and GHQ-12 raw scores, the Rosenberg Self-Esteem scale, the Child and Youth Resilience Measure-Revised, and Locus of Control, all in terms of their raw scores; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes (primary and secondary) and per round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table 7: Impact of adding cash to therapy on mental health.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary *Minimal depression*		**Secondary** *Discrete scores*				
	=1 if PHQ8≤4	=1 if GHQ12<3	PHQ8	GHQ12	Self-Esteem	Resilience	Locus of control
Panel A: Midline (12 months follow-up)							
IPT-G+	-0.101	-0.095	0.992	0.587	-	-	-
	(0.020)	(0.024)	(0.228)	(0.176)			
IPT-G mean	0.231	0.312	8.938	4.831	-	-	-
IPT-G SD	0.422	0.464	5.462	3.331			
Observations	1052	1052	1052	1052			
H0: IPT-G+=0 p-values	0.000	0.000	0.000	0.001	-	-	-
FDR adj. q-values	0.000	0.000	0.000	0.001			
Panel B: Endline (24 months follow-up)							
IPT-G+	-0.068	-0.071	0.458	0.226	-0.095	-0.946	-0.019
	(0.028)	(0.031)	(0.451)	(0.249)	(0.229)	(0.368)	(0.143)
IPT-G mean	0.244	0.303	9.144	5.102	13.109	43.399	5.937
IPT-G SD	0.430	0.460	5.799	3.641	3.485	5.507	2.683
Observations	964	953	964	953	940	903	950
H0: IPT-G+=0 p-values	0.017	0.025	0.314	0.367	0.680	0.012	0.896
FDR adj. q-values	0.025	0.025	0.611	0.611	0.851	0.062	0.896

Notes: This table shows ITT estimates of the impact of adding Cash to IPT-G on the primary and secondary mental health outcomes, comparing the IPT-G only group to IPT-G+ group; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for the primary outcomes, indicators for whether the PHQ-8 score is ≤ 4 or the GHQ-12 score is < 3; Columns 3-7 show results for the secondary outcomes, the PHQ-8 and GHQ-12 raw scores, the Rosenberg Self-Esteem scale, the Child and Youth Resilience Measure-Revised, and Locus of Control, all in terms of their raw scores; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table 8: Impact of therapy on human capital accumulation at the rapid resurvey.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Primary outcomes				**Secondary outcomes**			
	Desired fertility	Time preferences	Prob. of paid work	Compet-encies	Educ. aspirations	Pregnant within 5yrs	Married within 5yrs	Life expectancy
Rapid Resurvey (Immediate post-intervention)								
IPT-G	-0.043	0.055	0.024	0.103	-0.017	-0.027	-0.024	0.020
	(0.058)	(0.029)	(0.011)	(0.058)	(0.018)	(0.022)	(0.023)	(0.013)
Control mean	3.531	0.489	0.812	1.307	0.855	0.421	0.410	0.505
Control SD	1.371	0.500	0.237	1.200	0.352	0.494	0.492	0.222
Observations	1639	1657	1648	1627	1561	1596	1598	1555
H0: IPT-G=0 p-values	0.461	0.065	0.039	0.078	0.356	0.224	0.314	0.139
FDR adj. q-values	0.461	0.104	0.104	0.104	0.356	0.356	0.356	0.356

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary human capital accumulation outcomes at the rapid resurvey, comparing the control group to the IPT-G only group; The full sample is used as the Cash treatment arm was implemented after the Rapid Resurvey; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-4 show the primary outcomes: Desired fertility (Desired number of children at time of survey), time preferences (prefers 110,000 Uganda Shs in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and the score obtained on the Competencies test; Columns 4-8 show the secondary outcomes: Educational aspirations (wishes to pursue some tertiary education), would like to become pregnant within 5 years (or if already pregnant), would like to get married within 5 years (or if already married), and perceived life expectancy (the likelihood of being alive at 40); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and per round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table 9: Impact of therapy on human capital accumulation at 12 and 24 months.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Primary outcomes				**Secondary outcomes**		
	Enrolled in school	Compet-encies	Self-efficacy	Pregnant	Married	Risky sex	Time prefs.	Paid work	Desired fert.
Panel A: Midline (12 month follow-up)									
IPT-G	0.075	-	0.468	-0.018	-0.025	-0.009	0.056	-0.007	-0.275
	(0.032)		(0.334)	(0.013)	(0.012)	(0.023)	(0.030)	(0.018)	(0.072)
Control mean	0.328	-	31.649	0.096	0.084	0.273	0.429	0.751	3.786
Control SD	0.470		5.049	0.296	0.277	0.446	0.495	0.257	1.289
Observations	993		987	973	982	993	998	996	988
H0: IPT-G=0 p-values	0.021	-	0.166	0.194	0.042	0.715	0.063	0.711	0.000
FDR adj. q-values	0.104		0.242	0.242	0.106	0.715	0.095	0.711	0.001
Panel B: Endline (24 month follow-up)									
IPT-G	0.060	-0.060	-0.630	0.012	0.011	-0.032	0.055	0.024	0.014
	(0.030)	(0.091)	(0.815)	(0.024)	(0.021)	(0.036)	(0.033)	(0.012)	(0.080)
Control mean	0.257	1.444	29.743	0.213	0.170	0.381	0.395	0.793	3.813
Control SD	0.437	1.188	9.074	0.410	0.376	0.486	0.489	0.251	1.385
Observations	884	774	884	877	885	870	881	879	866
H0: IPT-G=0 p-values	0.048	0.515	0.442	0.606	0.584	0.375	0.095	0.055	0.859
FDR adj. q-values	0.289	0.606	0.606	0.606	0.606	0.606	0.143	0.143	0.859

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary human capital outcomes at midline and endline, comparing the control group to the IPT-G only group; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-6 show results for the primary outcomes: whether they are enrolled in school if school is in session or were enrolled in school when school was last in session (or if they have completed secondary schooling), the score on the Competencies test, the score on the Schwarzer and Jerusalem (1995) self-efficacy scale, whether they have been pregnant since baseline, whether they have married since baseline, and risky sex (whether they used a condom at their last intercourse); Columns 7-9 show results for the secondary outcomes: Time preferences (prefers 110,000 Uganda shillings in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and desired fertility (desired number of children at time of survey); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table 10: Impact of adding cash to therapy on human capital accumulation at 12 and 24 months.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Primary outcomes						**Secondary outcomes**		
	Enrolled in school	Compet-encies	Self-efficacy	Pregnant	Married	Risky sex	Time prefs.	Paid work	Desired fert.
Panel A: Midline (12 month follow-up)									
IPT-G+	-0.058	-	-0.306	0.003	0.008	-0.025	0.013	-0.006	0.332
	(0.028)		(0.249)	(0.015)	(0.013)	(0.023)	(0.034)	(0.017)	(0.061)
IPT-G mean	0.404	-	32.125	0.077	0.062	0.269	0.477	0.744	3.512
IPT-G SD	0.491		4.974	0.268	0.241	0.444	0.500	0.255	1.223
Observations	1043		1042	1024	1037	1045	1052	1045	1041
H0: IPT-G+=0 p-values	0.040	-	0.222	0.841	0.541	0.281	0.715	0.713	0.000
FDR adj. q-values	0.200		0.468	0.841	0.676	0.468	0.715	0.715	0.000
Panel B: Endline (24 month follow-up)									
IPT-G+	-0.032	0.020	0.660	-0.026	-0.008	0.004	-0.024	-0.035	0.079
	(0.027)	(0.081)	(0.702)	(0.027)	(0.023)	(0.037)	(0.031)	(0.015)	(0.081)
IPT-G mean	0.299	1.414	29.505	0.217	0.181	0.339	0.423	0.813	3.872
IPT-G SD	0.458	1.217	8.731	0.413	0.385	0.474	0.495	0.230	1.513
Observations	952	838	948	934	947	936	950	949	933
H0: IPT-G+=0 p-values	0.238	0.807	0.350	0.346	0.719	0.911	0.440	0.021	0.332
FDR adj. q-values	0.701	0.911	0.701	0.701	0.911	0.911	0.440	0.064	0.440

Notes: This table shows ITT estimates of the impact of adding Cash to IPT-G on the primary and secondary human capital accumulation outcomes, comparing the IPT-G only group to IPT-G+ group; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-6 show results for the primary outcomes: whether they are enrolled in school if school is in session or were enrolled in school when school was last in session (or if they have completed secondary schooling), the score on the Competencies test, the score on the Schwarzer and Jerusalem (1995) self-efficacy scale, whether they have been pregnant since baseline, whether they have married since baseline, and risky sex (whether they used a condom at their last intercourse); Columns 7-9 show results for the secondary outcomes: Time preferences (prefers 110,000 Uganda shillings in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and desired fertility (desired number of children at time of survey); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table 11: Impact of adding cash to therapy on adolescent's own and perceived household response to COVID-19.

	(1)	(2)	(3)	(4)	(5)	(6)
	Adolescent's own response				**Perceived HH response**	
	Get angry more quickly	Arguing more often	Talk about problems	Worry about health	Increased stress in HH	HH lost some income
Panel A: Midline (12 month follow-up)						
IPT-G+	0.088	-0.024	0.019	0.009	0.049	0.008
	(0.026)	(0.034)	(0.026)	(0.013)	(0.027)	(0.049)
IPT-G mean	0.480	0.384	0.670	0.924	0.637	2.529
IPT-G SD	0.500	0.487	0.471	0.265	0.481	0.758
Observations	1045	1047	1047	1047	1047	1044
H0: IPTG+=0 p-values	0.001	0.495	0.459	0.472	0.079	0.872
FDR adj. q-values	0.006	0.594	0.594	0.594	0.236	0.872
Panel B: Endline (24 month follow-up)						
IPT-G+	0.110	0.122	0.019	0.032	0.067	-0.033
	(0.037)	(0.042)	(0.026)	(0.034)	(0.035)	(0.078)
IPT-G mean	0.321	0.253	0.670	0.767	0.493	2.654
IPT-G SD	0.468	0.435	0.471	0.423	0.501	0.811
Observations	842	840	1047	842	843	842
H0: IPT-G+=0 p-values	0.004	0.005	0.459	0.350	0.059	0.675
FDR adj. q-values	0.014	0.014	0.594	0.524	0.119	0.787

Notes: This table shows ITT estimates of the impact of adding Cash to IPT-G on the households' response to COVID-19, comparing the IPT-G only group to IPT-G+ group; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Outcomes in columns 1 to 4 are binary indicators for the adolescent respondents saying that they responded to COVID-19 by: "Getting angry more quickly", "Arguing more often", "Talking more often about problems with your family to find solutions", "Fearing and worrying about your own health and the health of your loved ones"; Columns 5 shows whether the respondent agrees or partially agrees that COVID-19 has increased stress in their household; Column 6 indicates whether the respondent thinks their household lost some, most, or all of their income due to COVID-19; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of adolescents.

Appendix:
Therapy, Mental Health, and Human Capital Accumulation among Adolescents in Uganda

A Appendix Tables

Table A1: Attrition by treatment and baseline covariates.

	(1)	(2)	(3)	(4)	(5)	(6)
	Rapid Resurvey *Immediate post-intervention*		**Midline** *12 months*		**Endline** *24 months*	
IPT-G	0.001	0.001	0.004	0.006	-0.007	-0.009
	(0.015)	(0.015)	(0.019)	(0.019)	(0.023)	(0.023)
IPT-G+	-0.035	-0.035	-0.087	-0.084	-0.097	-0.101
	(0.014)	(0.014)	(0.014)	(0.014)	(0.021)	(0.021)
Age		-0.002		-0.001		0.008
		(0.008)		(0.009)		(0.011)
Ever pregnant		0.037		0.055		0.047
		(0.049)		(0.045)		(0.077)
Ever married		-0.006		-0.070		-0.064
		(0.056)		(0.046)		(0.085)
PPI		0.001		-0.003		-0.000
		(0.001)		(0.001)		(0.003)
PHQ-8		0.008		0.005		0.002
		(0.004)		(0.006)		(0.007)
IPT-G X Age		0.017		0.022		0.005
		(0.011)		(0.013)		(0.016)
IPT-G+ X Age		0.007		-0.006		-0.015
		(0.010)		(0.012)		(0.016)
IPT-G X Ever pregnant		-0.020		-0.129		-0.103
		(0.086)		(0.084)		(0.122)
IPT-G+ X Ever pregnant		-0.009		-0.023		-0.176
		(0.068)		(0.072)		(0.088)
IPT-G X Ever married		-0.026		0.082		0.107
		(0.089)		(0.092)		(0.157)
IPT-G+ X Ever married		-0.054		0.148		0.094
		(0.076)		(0.090)		(0.097)
IPT-G X PPI		0.000		0.002		0.002
		(0.002)		(0.002)		(0.004)
IPT-G+ X PPI		0.000		0.003		0.001
		(0.002)		(0.002)		(0.003)
IPT-G X PHQ-8		-0.010		-0.005		-0.016
		(0.006)		(0.009)		(0.010)
IPT-G+ X PHQ-8		-0.005		-0.003		-0.011
		(0.005)		(0.007)		(0.009)
Control mean	0.139	0.139	0.205	0.205	0.261	0.261
Observations	1919	1919	1919	1919	1695	1695
t-tests - p value						
H0: IPT-G=0	0.965	0.974	0.838	0.748	0.754	0.687
H0: IPT-G+C=0	0.015	0.016	0.000	0.000	0.000	0.000
H0: IPT-G = IPT-G+C	0.012	0.011	0.000	0.000	0.000	0.000
F-tests of joint orthogonality - p value						
H0: Controls=0		0.499		0.302		0.888
H0: IPT-G interactions=0		0.201		0.136		0.506
H0: IPT-G+C interactions=0		0.827		0.218		0.113

Notes: * p<0.10, ** p<0.05, *** p<0.01; This table shows the impact of treatment on attrition in each survey round; All models also include block fixed effect centered and fully interacted with treatments; Standard errors clustered at the club level in parentheses; t-tests report p-values from the indicated null hypothesis on the treatment coefficients; F-tests report p-values from tests of the joint orthogonality of the full set of indicated coefficients.

Table A2: Mean outcomes by levels of attendance at the rapid resurvey.

Attendance	(1) =1 if PHQ8≤4	(2) PHQ8 Score	(3) =1 if GHQ12<3	(4) GHQ12-Score	Obs.
Control group	0.257	8.175	0.257	4.991	561
Attended 0 sessions	0.244	8.494	0.277	5.008	484
Attended 1-9 sessions	0.279	8.369	0.324	4.523	111
Attended 10-13 sessions	0.303	7.539	0.333	4.371	456
Attended all 14 sessions	0.327	7.691	0.400	3.964	55

Notes: Each cell shows the average outcome in each round by the level of attendance. IPT-G and IPT-G+ groups are combined in the rapid resurvey round.

Table A3: Impact of therapy on mental health outcomes, adjusted estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary *Minimal depression*		**Secondary** *Discrete scores*				
	=1 if PHQ8≤4	=1 if GHQ12<3	PHQ8	GHQ12	Self-Esteem	Resilience	Locus of control
Panel A: Rapid Resurvey (immediate post-intervention)							
IPT-G	0.028	0.056	-0.302	-0.450	-0.076	0.001	0.064
	(0.023)	(0.024)	(0.296)	(0.191)	(0.180)	(0.269)	(0.125)
Control mean	0.256	0.256	8.198	5.002	17.755	43.136	5.123
Control SD	0.437	0.437	4.842	3.166	3.599	4.789	3.242
Observations	1669	1669	1669	1669	1610	1608	1610
H0: IPT-G=0 p-values	0.229	0.020	0.311	0.020	0.672	0.996	0.608
FDR adj. q-values	0.229	0.039	0.777	0.102	0.841	0.996	0.841
Panel B: Midline (12 month follow-up)							
IPT-G	0.048	0.049	-0.355	-0.144	-	-	-
	(0.020)	(0.024)	(0.279)	(0.172)			
Control mean	0.184	0.278	9.226	4.900	-	-	-
Control SD	0.388	0.449	5.137	3.235			
Observations	1001	1001	1001	1001			
H0: IPT-G=0 p-values	0.017	0.042	0.208	0.403	-	-	-
FDR adj. q-values	0.034	0.042	0.403	0.403			
Panel C: Endline (24 month follow-up)							
IPT-G	-0.002	0.010	0.360	0.272	-0.068	0.010	-0.156
	(0.026)	(0.026)	(0.435)	(0.212)	(0.218)	(0.322)	(0.101)
Control mean	0.248	0.285	8.919	4.935	13.111	43.454	6.075
Control SD	0.432	0.452	5.529	3.482	3.163	5.292	2.838
Observations	901	884	901	884	873	833	882
H0: IPT-G=0 p-values	0.939	0.696	0.410	0.203	0.755	0.976	0.126
FDR adj. q-values	0.939	0.939	0.683	0.507	0.944	0.976	0.507

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary mental health outcomes, comparing the control group to the IPT-G only group; The full sample is used in Panel A as the Cash treatment arm was implemented after the Rapid Resurvey; All regression models include randomization block fixed effects and baseline covariates centered and fully interacted with treatment, covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for the primary outcomes, indicators for whether the PHQ-8 score is ≤ 4 or the GHQ-12 score is < 3; Columns 3-7 show results for the secondary outcomes, the PHQ-8 and GHQ-12 raw scores, the Rosenberg Self-Esteem scale, the Child and Youth Resilience Measure-Revised, and Locus of Control, all in terms of their raw scores; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes (primary and secondary) and per round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A4: Impact of therapy on mental health outcomes, LATE estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary *Minimal depression*		**Secondary** *Discrete scores*				
	=1 if PHQ8≤4	=1 if GHQ12<3	PHQ8	GHQ12	Self-Esteem	Resilience	Locus of control
Panel A: Rapid Resurvey (immediate post-intervention)							
Therapy	0.057	0.107	-0.730	-0.880	0.028	0.248	0.116
	(0.039)	(0.041)	(0.552)	(0.354)	(0.309)	(0.465)	(0.253)
Control mean	0.257	0.257	8.175	4.991	17.755	43.150	5.124
Control SD	0.437	0.437	4.816	3.159	3.602	4.784	3.245
Observations	1667	1667	1667	1667	1608	1606	1608
H0: Therapy=0 p-values	0.150	0.010	0.186	0.013	0.927	0.594	0.645
First stage F-stat.	21.626	21.626	21.626	21.626	21.112	20.953	20.377
Panel B: Midline (12 month follow-up)							
Therapy	0.078	0.085	-0.578	-0.262	-	-	-
	(0.035)	(0.047)	(0.551)	(0.304)			
Control mean	0.184	0.278	9.226	4.900	-	-	-
Control SD	0.388	0.449	5.137	3.235			
Observations	1001	1001	1001	1001			
H0: Therapy=0 p-values	0.026	0.067	0.294	0.389	-	-	-
First stage F-stat.	14.025	14.025	14.025	14.025			
Panel C: Endline (24 month follow-up)							
Therapy	0.031	0.028	0.192	0.326	-0.245	0.079	-0.361
	(0.047)	(0.048)	(0.809)	(0.397)	(0.421)	(0.652)	(0.200)
Control mean	0.248	0.285	8.919	4.935	13.111	43.454	6.075
Control SD	0.432	0.452	5.529	3.482	3.163	5.292	2.838
Observations	901	884	901	884	873	833	882
H0: IPT-G=0 p-value	0.507	0.554	0.813	0.411	0.561	0.903	0.071
First-stage F-stat.	17.070	16.736	17.070	16.736	16.061	15.734	16.372

Notes: This table shows LATE-IV estimates of the impact of IPT-G on mental health outcomes; Standard errors clustered at the club level in parentheses; The full sample is used in Panel A as the Cash treatment arm was implemented after the Rapid Resurvey; LATE estimates instrument having attended therapy (at least one session) with assignment to the IPT-G treatment group; All regression models include randomization block fixed effects centered and fully interacted with treatment, interactions between attending therapy and the centered blocks are instrumented with respective interactions between assigned to treatment and the centered blocks; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for the primary outcomes, indicators for whether the PHQ-8 score is ≤ 4 or the GHQ-12 score is < 3; Columns 3-7 show results for the secondary outcomes, the PHQ-8 and GHQ-12 raw scores, the Rosenberg Self-Esteem scale, the Child and Youth Resilience Measure-Revised, and Locus of Control, all in terms of their raw scores; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients; The first stage F-stat. refers to the Cragg-Donald Wald F-statistic.

Table A5: Impact of therapy on moderate and severe depression.

	(1)	(2)	(3)	(4)
	Moderate depression *PHQ8≥10*		**Severe depression** *PHQ8≥15*	
Panel A: Rapid Resurvey (immediate post-intervention)				
IPT-G	-0.036	-0.031	-0.015	-0.015
	(0.029)	(0.028)	(0.019)	(0.019)
Control mean	0.371	0.371	0.108	0.108
Control SD	0.483	0.483	0.311	0.311
Observations	1672	1672	1672	1672
Covariates	No	Yes	No	Yes
H0: IPT-G=0 p-values	0.208	0.272	0.426	0.429
Panel B: Midline (12 months follow-up)				
IPT-G	-0.043	-0.038	0.027	0.027
	(0.027)	(0.028)	(0.019)	(0.019)
Control mean	0.463	0.463	0.146	0.146
Control SD	0.499	0.499	0.353	0.353
Observations	1001	1001	1001	1001
Covariates	No	Yes	No	Yes
H0: IPT-G=0 p-values	0.107	0.175	0.148	0.166
Panel C: Endline (24 months follow-up)				
IPT-G	0.003	0.008	0.019	0.021
	(0.028)	(0.028)	(0.027)	(0.028)
Control mean	0.427	0.427	0.158	0.158
Control SD	0.495	0.495	0.365	0.365
Observations	901	901	901	901
H0: IPT-G=0 p-values	0.904	0.784	0.498	0.453

Notes: This table shows ITT estimates of the impact of IPTG on mental health, comparing the control group to the IPTG only group; The full sample is used in Panel A as the Cash treatment arm was implemented after the Rapid Resurvey; All regression models include randomization block fixed effects centered and fully interacted with treatment, adjusted models also include baseline covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score, also centered and interacted; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for having a PHQ8 score ≥10, which indicates symptoms of Major Depressive Disorder, and columns 3-4 for having a PHQ8 score ≥15, which indicates symptoms of severe depression (Kroenke et al., 2009); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes (primary and secondary) and per round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A6: Impact of adding cash to therapy on mental health, adjusted estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary *Minimal depression*		**Secondary** *Discrete scores*				
	=1 if PHQ8≤4	=1 if GHQ12<3	PHQ8	GHQ12	Self-Esteem	Resilience	Locus of control
Panel A: Midline (12 month follow-up)							
IPT-G+	-0.096	-0.088	0.932	0.528	-	-	-
	(0.020)	(0.024)	(0.239)	(0.176)			
IPT-G mean	0.231	0.312	8.938	4.831	-	-	-
IPT-G SD	0.422	0.464	5.462	3.331			
Observations	1052	1052	1052	1052			
H0: IPT-G+=0 p-values	0.000	0.001	0.000	0.004	-	-	-
FDR adj. q-values	0.000	0.001	0.000	0.004			
Panel B: Endline (24 month follow-up)							
IPT-G+	-0.059	-0.066	0.376	0.180	-0.091	-0.917	-0.065
	(0.028)	(0.031)	(0.444)	(0.239)	(0.228)	(0.372)	(0.128)
Control mean	0.244	0.303	9.144	5.102	13.109	43.399	5.937
Control SD	0.430	0.460	5.799	3.641	3.485	5.507	2.683
Observations	964	953	964	953	940	903	950
H0: IPT-G+=0 p-values	0.036	0.033	0.400	0.452	0.690	0.016	0.615
FDR adj. q-values	0.036	0.036	0.690	0.690	0.690	0.081	0.690

Notes: This table shows ITT estimates of the impact of adding Cash to IPT-G on the primary and secondary mental health outcomes, comparing the IPT-G only group to IPT-G+ group; All regression models include randomization block fixed effects and baseline covariates centered and fully interacted with treatment, covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-2 show results for the primary outcomes, indicators for whether the PHQ-8 score is ≤ 4 or the GHQ-12 score is < 3; Columns 3-7 show results for the secondary outcomes, the PHQ-8 and GHQ-12 raw scores, the Rosenberg Self-Esteem scale, the Child and Youth Resilience Measure-Revised, and Locus of Control, all in terms of their raw scores; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A7: Impact of therapy on human capital accumulation at the rapid resurvey, adjusted estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Primary outcomes				**Secondary outcomes**			
	Desired fertility	Time preferences	Prob. of paid work	Compet-encies	Educ. aspirations	Pregnant within 5yrs	Married within 5yrs	Life expectancy
Rapid Resurvey (Immediate post-intervention)								
IPT-G	-0.033	0.054	0.023	0.088	-0.021	-0.013	-0.009	0.019
	(0.054)	(0.028)	(0.012)	(0.056)	(0.018)	(0.015)	(0.017)	(0.013)
Control mean	3.531	0.489	0.812	1.307	0.855	0.421	0.410	0.505
Control SD	1.371	0.500	0.237	1.200	0.352	0.494	0.492	0.222
Observations	1639	1657	1648	1627	1561	1596	1598	1555
H0: IPT-G=0 p-values	0.545	0.061	0.048	0.120	0.233	0.389	0.570	0.143
FDR adj. q-values	0.545	0.122	0.122	0.160	0.466	0.519	0.570	0.466

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary human capital accumulation outcomes at the rapid resurvey, comparing the control group to the IPT-G only group; The full sample is used as the Cash treatment arm was implemented after the Rapid Resurvey; All regression models include randomization block fixed effects and baseline covariates centered and fully interacted with treatment, covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-4 show the primary outcomes: Desired fertility (Desired number of children at time of survey), time preferences (prefers 110,000 Uganda shillings in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and the score obtained on the Competencies test (total score (0-3) on set of questions on ability to make change that test numeracy and literacy); Columns 4-8 show the secondary outcomes: Educational aspirations (wishes to pursue some tertiary education), would like to become pregnant within 5 years (or if already pregnant), would like to get married within 5 years (or if already married), and perceived life expectancy (the likelihood of being alive at 40); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and per round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A8: Impact of therapy on human capital accumulation at 12 and 24 months, adjusted estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Primary outcomes						**Secondary outcomes**		
	Enrolled in school	Compet-encies	Self-efficacy	Pregnant	Married	Risky sex	Time prefs.	Paid work	Desired fert.
Panel A: Midline (12 month follow-up)									
IPT-G	0.060	-	0.469	-0.011	-0.031	-0.003	0.048	-0.010	-0.264
	(0.028)		(0.335)	(0.014)	(0.013)	(0.018)	(0.029)	(0.018)	(0.066)
Control mean	0.328	-	31.649	0.096	0.084	0.273	0.429	0.751	3.786
Control SD	0.470		5.049	0.296	0.277	0.446	0.495	0.257	1.289
Observations	993		987	973	982	993	998	996	988
H0: IPT-G=0 p-values	0.038	-	0.166	0.452	0.021	0.863	0.104	0.570	0.000
FDR adj. q-values	0.095		0.276	0.565	0.095	0.863	0.156	0.570	0.001
Panel B: Endline (24 month follow-up)									
IPT-G	0.052	-0.081	-0.505	0.013	0.012	-0.022	0.052	0.022	0.027
	(0.024)	(0.087)	(0.786)	(0.023)	(0.021)	(0.029)	(0.033)	(0.012)	(0.077)
Control mean	0.257	1.444	29.743	0.213	0.170	0.381	0.395	0.793	3.813
Control SD	0.437	1.188	9.074	0.410	0.376	0.486	0.489	0.251	1.385
Observations	884	774	884	877	885	870	881	879	866
H0: IPT-G=0 p-values	0.033	0.355	0.523	0.588	0.566	0.449	0.117	0.077	0.724
FDR adj. q-values	0.195	0.588	0.588	0.588	0.588	0.588	0.175	0.175	0.724

Notes: This table shows ITT estimates of the impact of IPT-G on the primary and secondary human capital outcomes at midline and endline, comparing the control group to the IPT-G only group; All regression models include randomization block fixed effects and baseline covariates centered and fully interacted with treatment, covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-6 show results for the primary outcomes: whether they are enrolled in school if school is in session or were enrolled in school when school was last in session (or if they have completed secondary schooling), the score on the Competencies test (total score (0-3) on set of questions on ability to make change that test numeracy and literacy) , the score on the Schwarzer and Jerusalem (1995) self-efficacy scale, whether they have been pregnant since baseline, whether they have married since baseline, and risky sex (whether they used a condom at their last intercourse); Columns 7-9 show results for the secondary outcomes: Time preferences (prefers 110,000 Uganda shillings in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and desired fertility (desired number of children at time of survey); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A9: Impact of adding cash to therapy on human capital accumulation at 12 and 24 months, adjusted estimates.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Primary outcomes						**Secondary outcomes**		
	Enrolled in school	Compet-encies	Self-efficacy	Pregnant	Married	Risky sex	Time prefs.	Paid work	Desired fert.
Panel A: Midline (12 month follow-up)									
IPT-G+	-0.049	-	-0.347	-0.007	0.007	-0.014	0.019	-0.004	0.328
	(0.022)		(0.255)	(0.016)	(0.013)	(0.018)	(0.033)	(0.017)	(0.057)
IPT-G mean	0.404	-	32.125	0.077	0.062	0.269	0.477	0.744	3.512
IPT-G SD	0.491		4.974	0.268	0.241	0.444	0.500	0.255	1.223
Observations	1043		1042	1024	1037	1045	1052	1045	1041
H0: IPT-G+=0 p-values	0.029	-	0.178	0.685	0.588	0.448	0.568	0.822	0.000
FDR adj. q-values	0.144		0.446	0.685	0.685	0.685	0.822	0.822	0.000
Panel B: Endline (24 month follow-up)									
IPT-G+	-0.015	0.013	0.569	-0.041	-0.021	-0.003	-0.022	-0.033	0.080
	(0.021)	(0.078)	(0.689)	(0.026)	(0.022)	(0.032)	(0.032)	(0.015)	(0.078)
IPT-G mean	0.299	1.414	29.505	0.217	0.181	0.339	0.423	0.813	3.872
IPT-G SD	0.458	1.217	8.731	0.413	0.385	0.474	0.495	0.230	1.513
Observations	952	838	948	934	947	936	950	949	933
H0: IPT-G+=0 p-values	0.455	0.863	0.412	0.124	0.340	0.928	0.480	0.028	0.310
FDR adj. q-values	0.683	0.928	0.683	0.683	0.683	0.928	0.480	0.084	0.466

Notes: This table shows ITT estimates of the impact of adding Cash to IPT-G on the primary and secondary human capital accumulation outcomes, comparing the IPT-G only group to IPT-G+ group; All regression models include randomization block fixed effects and baseline covariates centered and fully interacted with treatment, covariates are the poverty probability score, age, ever married, ever pregnant, and the baseline PHQ-8 score; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Columns 1-6 show results for the primary outcomes: whether they are enrolled in school if school is in session or were enrolled in school when school was last in session (or if they have completed secondary schooling), the score on the Competencies test (total score (0-3) on set of questions on ability to make change that test numeracy and literacy), the score on the Schwarzer and Jerusalem (1995) self-efficacy scale, whether they have been pregnant since baseline, whether they have married since baseline, and risky sex (whether they used a condom at their last intercourse); Columns 7-9 show results for the secondary outcomes: Time preferences (prefers 110,000 Uganda shillings in one month instead of 90,000 today), the self-reported probability of engaging in paid work at age 25, and desired fertility (desired number of children at time of survey); The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of CRs.

Table A10: Impact of therapy on adolescent's own and perceived household response to COVID-19.

	(1)	(2)	(3)	(4)	(5)	(6)
	Adolescent's own response				**Perceived HH response**	
	Get angry more quickly	Arguing more often	Talk about problems	Worry about health	Increased stress in HH	HH lost some income
Panel A: Midline (12 month follow-up)						
IPT-G	-0.011	0.019	0.023	-0.004	0.005	0.033
	(0.029)	(0.033)	(0.039)	(0.013)	(0.031)	(0.054)
Control mean	0.484	0.355	0.654	0.932	0.623	2.505
Control SD	0.500	0.479	0.476	0.251	0.485	0.787
Observations	991	992	993	993	993	993
H0: IPT-G=0 p-values	0.697	0.569	0.555	0.745	0.873	0.541
FDR adj. q-values	0.873	0.873	0.873	0.873	0.873	0.873
Panel B: Endline (24 month follow-up)						
IPT-G	-0.021	-0.003	0.023	-0.046	0.027	-0.141
	(0.034)	(0.038)	(0.039)	(0.025)	(0.037)	(0.070)
Control mean	0.348	0.273	0.654	0.811	0.484	2.770
Control SD	0.477	0.446	0.476	0.392	0.500	0.790
Observations	780	775	993	777	780	777
H0: IPT-G=0 p-values	0.527	0.945	0.555	0.072	0.473	0.047
FDR adj. q-values	0.632	0.945	0.873	0.191	0.632	0.191

Notes: This table shows ITT estimates of the impact of IPT-G on the households' response to COVID-19, comparing the IPT-G only group to the control group; All regression models include randomization block fixed effects centered and fully interacted with treatment; Standard errors clustered at the club level in parentheses; Estimates at endline are weighted to account for the probability of selection for intensive tracking; Outcomes in columns 1 to 4 are binary indicators for the adolescent respondent saying that they responded to COVID-19 by: "Getting angry more quickly", "Arguing more often", "Talking more often about problems with your family to find solutions", "Fearing and worrying about your own health and the health of your loved ones"; Columns 5 shows whether the respondent agrees or partially agrees that COVID-19 has increased stress in their household; Column 6 indicates whether the respondent thinks their household lost some, most, or all of their income due to COVID-19; The rows marked as *H0:...* show the p-value for a t-test of the indicated null hypothesis on the regression coefficients and the corresponding q-values adjusting for the false discovery rate within primary and secondary outcomes and round, as per Benjamini and Hochberg (1995); Sample size differences across outcomes are due to shorter tracking questionnaires being administered to difficult-to-reach subsets of adolescents.

Table A11: Attrition bounds, impact of adding cash to therapy on mental health.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Lower bounds			**Baseline**	**Upper bounds**		
	-.25 SD	-.1 SD	Lee		Lee	+.1 SD	+.25 SD
Panel A: Midline (12 month follow-up)							
PHQ-8≤4	-0.130***	-0.110***	-0.172***	-0.101***	-0.077*	-0.083***	-0.063***
	(0.017)	(0.017)	[0.041]	(0.020)	[0.040]	(0.017)	(0.017)
PHQ-8 score	0.515***	0.785***	0.026	0.992***	1.807***	1.144***	1.413***
	(0.189)	(0.185)	[0.576]	(0.228)	[0.584]	(0.181)	(0.179)
GHQ-12<3	-0.128***	-0.105***	-0.157***	-0.095***	-0.053	-0.075***	-0.052**
	(0.021)	(0.021)	[0.054]	(0.024)	[0.047]	(0.021)	(0.021)
GHQ-12 score	0.293*	0.462***	-0.042	0.587***	1.020**	0.686***	0.855***
	(0.152)	(0.149)	[0.381]	(0.176)	[0.435]	(0.145)	(0.143)
Panel B: Endline (24 month follow-up)							
PHQ-8≤4	-0.112***	-0.086***	-0.171***	-0.074**	-0.043	-0.052**	-0.027
	(0.025)	(0.025)	[0.047]	(0.031)	[0.060]	(0.025)	(0.026)
PHQ-8 score	-0.116	0.232	-0.163	0.465	1.735**	0.695*	1.042***
	(0.364)	(0.359)	[1.080]	(0.464)	[0.774]	(0.353)	(0.350)
GHQ-12<3	-0.118***	-0.089***	-0.175***	-0.072**	-0.035	-0.051*	-0.022
	(0.027)	(0.026)	[0.058]	(0.033)	[0.063]	(0.026)	(0.026)
GHQ-12 score	-0.037	0.186	-0.242	0.333	1.044**	0.482**	0.704***
	(0.206)	(0.205)	[0.565]	(0.262)	[0.438]	(0.205)	(0.206)

Notes: * p<0.10, ** p<0.05, *** p<0.01; This table shows robustness to attrition of the ITT estimates of the impact of adding cash to IPT-G to attrition on the primary mental health outcomes; Column 4 shows the baseline unadjusted estimates shown in Table 7; Columns 3 and 5 show results using the Lee (2009) bounded estimator, which consists of trimming the top/bottom of the control/treatment group by the percent difference in attrition rates between the treatment and control groups (the group with the lower attrition rate is trimmed), controls include only the block fixed effects, robust standard errors in square brackets; Columns 1-2 and 6-7 show results using Horowitz and Manski (2000) as in Kling et al. (2007), which replace the outcomes of attritors with ±0.x standard deviations of their respective treatment group-survey round means, lower bounds subtract this value from the treatment group and add it to the control group and vice versa for the upper bounds, controls include the block fixed effects centered and fully interacted with treatment, Standard errors clustered at the club level in parentheses.

Table A12: Attrition bounds, impact of adding cash to therapy on human capital.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Lower bounds			**Baseline**	**Upper bounds**		
	-.25 SD	-.1 SD	Lee		Lee	+.1 SD	+.25 SD
Panel A: Midline (12 month follow-up)							
Enrolled in school	-0.100***	-0.074***	-0.142***	-0.058**	-0.021	-0.040*	-0.014
	(0.022)	(0.023)	[0.050]	(0.028)	[0.055]	(0.023)	(0.024)
Self-efficacy score	-0.712***	-0.450**	-1.050	-0.306	0.716	-0.102	0.160
	(0.202)	(0.201)	[0.738]	(0.249)	[0.663]	(0.200)	(0.201)
Pregnancies	-0.022*	-0.007	-0.028	0.003	0.019	0.014	0.029**
	(0.012)	(0.012)	[0.035]	(0.015)	[0.031]	(0.012)	(0.012)
Marriages	-0.013	-0.000	-0.035	0.008	0.019	0.018	0.031***
	(0.011)	(0.011)	[0.027]	(0.013)	[0.023]	(0.011)	(0.011)
Risky sex	-0.065***	-0.042**	-0.115*	-0.025	0.000	-0.011	0.012
	(0.020)	(0.020)	[0.061]	(0.023)	[0.048]	(0.019)	(0.019)
Panel B: Endline (24 month follow-up)							
Enrolled in school	-0.073***	-0.044*	-0.112*	-0.022	0.014	-0.005	0.024
	(0.024)	(0.023)	[0.065]	(0.028)	[0.056]	(0.023)	(0.023)
Competencies	-0.196***	-0.081	-0.319	0.012	0.282	0.071	0.186***
	(0.053)	(0.053)	[0.259]	(0.081)	[0.289]	(0.054)	(0.054)
Self-efficacy score	-0.361	0.095	-0.611	0.397	1.373	0.704**	1.160***
	(0.341)	(0.345)	[1.046]	(0.473)	[1.356]	(0.352)	(0.359)
Pregnancies	-0.083***	-0.055***	-0.075	-0.037	-0.003	-0.018	0.011
	(0.020)	(0.020)	[0.063]	(0.026)	[0.055]	(0.020)	(0.019)
Marriages	-0.037*	-0.012	-0.067	0.002	0.045	0.021	0.046**
	(0.019)	(0.019)	[0.058]	(0.023)	[0.044]	(0.018)	(0.018)
Risky sex	-0.058**	-0.027	-0.107	-0.007	0.050	0.016	0.048*
	(0.028)	(0.028)	[0.076]	(0.035)	[0.057]	(0.027)	(0.027)

Notes: * p<0.10, ** p<0.05, *** p<0.01; This table shows robustness to attrition of the ITT estimates of the impact of adding cash to IPT-G on the primary human capital accumulation outcomes; Column 4 shows the baseline unadjusted estimates shown in Table 10; Columns 3 and 5 show results using the Lee (2009) bounded estimator, which consists of trimming the top/bottom of the control/treatment group by the percent difference in attrition rates between the treatment and control groups (the group with the lower attrition rate is trimmed), controls include only the block fixed effects, robust standard errors in square brackets; Columns 1-2 and 6-7 show results using Horowitz and Manski (2000) as in Kling et al. (2007), which replace the outcomes of attritors with ±0.x standard deviations of their respective treatment group-survey round means, lower bounds subtract this value from the treatment group and add it to the control group and vice versa for the upper bounds, controls include the block fixed effects centered and fully interacted with treatment, Standard errors clustered at the club level in parentheses.

B StrongMinds Uganda

B.1 Background on interpersonal psychotherapy

Interpersonal psychotherapy (IPT) is widely recognized as an efficacious form of psychotherapy for the treatment of depression (Frank and Levenson, 2011), including in adolescents (Morris, 2012). IPT is a time-limited, manualized intervention, that was developed to treat Major Depressive Disorder (MDD) by Klerman et al. (1984); Weissman et al. (2000), and was subsequently adapted to treat a number of related disorders - e.g. bipolar disorder, dysthymic disorder, post-traumatic stress disorder, bulimia nervosa, social anxiety disorder, among others -, to treat populations with specific needs - e.g. adolescents, the elderly, HIV-positive patients, etc. -, and to be delivered in group settings.[25] There exists by now an extensive evidence base supporting the efficacy and effectiveness of IPT, although much of the evidence is from high-income countries (Cuijpers et al., 2011, 2016). In 2015 the WHO's Guideline Development Committee recommended that psychotherapy with or without pharmacotherapy can be used as first line treatment for moderate to severe depression, especially in resource constrained settings and where the use of medicines is discouraged (e.g. pregnant women, or adolescents at risk of addiction) (World Health Organization, 2015, 2019).[26] In the United States, it is currently one of the only two evidence-based psychotherapies recommended by the National Institute of Health for the treatment of adolescent depression (National Institute of Health and Clinical Excellence, 2005).

IPT draws its foundations from relational theory - which emphasizes the link between interpersonal relationships and psychological well-being (Bowlby, 1969, 1973; Sullivan, 1940) - and on the vast body of research linking major life-events, stressors, and social support with psychiatric illness (Lipsitz and Markowitz, 2013). It is built on the premise that psychiatric illness is often caused and maintained by personal crises and/or significant life events, most often of an interpersonal nature, and proposes a framework through which patients directly address these problems (Klerman et al., 1984; Weissman et al., 2000). Therein lies the distinguishing feature of IPT, which is that it does not attempt to fix a problem in the patient, as is the focus of most other common forms of therapy, but rather aims to help the patient

[25] See e.g., Lipsitz and Markowitz (2013) for a number of references on the specific adaptations.

[26] The WHO's Mental Health Gap Action Programme (mhGAP) guidelines state the following: "As first-line therapy, health-care providers may select psychological treatments (such as behavioural activation, cognitive-behavioural therapy [CBT], and interpersonal psychotherapy [IPT]) or antidepressant medication (such as selective serotonin reuptake inhibitors [SSRIs] and tricyclic antidepressants [TCAs]). They should keep in mind the possible adverse effects associated with antidepressant medication, the ability to deliver either intervention (in terms of expertise, and/or treatment availability), and individual preferences ... Different [psychological] treatment formats for consideration include individual and/or group face-to- face psychological treatments delivered by professionals and supervised lay therapists".

fix the problem, and/or their relationship with the problem.[27] By working on resolving a focal interpersonal problem, IPT intends to activate *interpersonal change mechanisms*, which can be broadly characterized as the pathways and mechanisms that contribute to alleviating the psychiatric illness (or its symptoms). These include: (i) providing/improving social support; (ii) reducing interpersonal conflict and stressors; (iii) helping to process and interpret emotions; (iv) and improving interpersonal skills (see e.g. Lipsitz and Markowitz (2013) for an excellent in depth discussion of the evidence behind each of these mechanisms). Nevertheless, the focus remains on resolving the current problem and reducing the symptoms of the illness.

A standard course of the therapy, which can range from 6 to 20 weeks, consists of three main phases: In an initial phase, the therapist helps patients identify a specific problem which will be the focus of treatment. The problems typically fall within one of four primary problem areas, or *triggers*, that are associated with the onset of depression: (i) Grief - due to loss of a loved one; (ii) Role Transition - major life changes (that can be either good or bad, e.g. illness, illness of a loved one, birth of a child, retirement); (iii) role dispute - a conflict with an important person in one's life (e.g. parents, partners, coworkers, etc.); and (iv) Interpersonal Deficits - loneliness and social isolation.[28] During this phase, the therapist will also help the patient understand their diagnosis of depression and establish the patient's *sick role* - i.e. that their illness is not intrinsic to their selves but rather something they are currently suffering from that can be overcome. In the second phase, which will make up the bulk of the treatment, the client and the therapist will work towards alleviating the problem using a number of therapeutic practices. Patients will explore, identify, and express both positive and negative feelings about their problems and examine the link between their mood and events in their interpersonal lives. In the group context, they are encouraged to turn to fellow group members for guidance. Through this introspection, patients find new ways to deal with the recurrent or persistent problems that are triggering their depression - whether it is by directly resolving the problem or changing their relationship with the problem. In the final phase, the patient and therapists will discuss the end of the therapy, review improvements, and make future plans - possibly in anticipation of future difficulties.

[27] This framework, also known as the *medical model* or *sick role*, separates IPT from other common therapy models that identify and seek to change some problematic aspect of the patient's personality, attachments, schemas, etc. (Lipsitz and Markowitz, 2013).

[28] This category is also often chosen when it is difficult to define the participant's problem within one of the other three problem areas.

B.2 Mentor selection

Mentors are selected from the community within which the ELA club is located. In a new ELA community, the program assistant (PA) from the BRAC Uganda branch overseeing the ELA club conducts an initial discussion with adults and adolescent girls from the community to explain the ELA model. During the discussion, the PA asks for their input to find a suitable space where the club could be held and who could be potential mentors. After the PA has completed an initial assessment and proposed the mentors, the Area Coordinator makes the final decision. The guiding criteria determined by BRAC Uganda for selecting the mentors are the following:

1. She should be between 19 and 22 years old.
2. She must be a permanent resident of the village/community
3. She should be willing to work for four hours a day (club opening hours)
4. She should show evidence of having leadership qualities, as well as commitment and interest in working with and for adolescents
5. She should be socially accepted in the community
6. She must not be a student
7. She should be ready to attend training and monthly refresher courses
8. She should have the capacity to run the club and other related activities effectively and efficiently

Preference is given to mentors who have leadership experience, either at school or in the community. It is also preferred that the mentor has a qualification of at least Secondary-2 and is not a member of any microfinance group.

B.3 Mentor training

Although the SMU program relies on mentors recruited within the communities to deliver the 14 weekly therapy sessions, the mentors benefit from extensive training (and refresher trainings) as well as continuous supervision throughout the program.

Before the start of the therapy, the mentors received a 6-day-long training covering the entire process of delivery of IPT-G.[29] The training covered the following:

[29]During the study, and prior to the intervention, the newly recruited mentors (89 in total) were trained in three batches over the course of three weeks. The training was conducted by four facilitators.

1. counseling skills: This section of training was delivered through lectures and role play sessions. The topics delivered included basic counseling skills (active listening, probing and questioning, sensitivity and the role of the counselor), ethics of counseling (confidentiality, empathy, non-judgmental etc.), and "why I need supervision".

2. Overview of depression: This section aimed to define and describe depression, explain what the symptoms of depression are and how someone can be diagnosed with depression by using the PHQ-9.

3. Introduction to IPT-G: This section introduced IPT-G and its approach to counseling to the mentors. This included introducing the four problem areas and the link between daily events, mood, and the problem areas.

4. How to conduct a pre-group session: The pre-group is a one on one session between the facilitator and the potential client, and is an important component of IPT-G as delivered by SMU. The training covered screening for depression (using the PHQ-9), probing for problem areas/triggers, and goal setting.

   Another important component of training during this session is screening for suicide risk when a participant responds to question 9 on the PHQ-9. The mentors are trained on assessing suicide risk and on initiating a safety plan for at risk participants, as well as on identifying and referring for further treatment participants who might be 'critical cases' (i.e. who score above 11 on the suicide assessment).[30]

5. How to conduct the initial and middle phases of IPT-G: This section of the training focused on delivering the key tasks of the initial and middle phases. The trainers provided in-depth training on how to apply the four problem areas of IPT-G in group therapy, and continued to build on the use of basic counseling skills and ethics of counseling.

During the therapy, SMU Mental Health Supervisors (MHS) conducted both scheduled and impromptu supervision visits to observe the mentors at work. The MHS assessed the mentor using systematic criteria laid out in the SMU quality assurance tool, and provided immediate feedback to the mentor at the end of the session. SMU also held weekly debrief sessions at the BRAC branches. The debriefing sessions are divided into three parts:

1. A review of the activities of the past week, also where mentor files are reviewed and session specific data is collected (e.g. group attendance).

[30]Note that although mentors are trained in assessing suicide risk, it is the supervisors who ultimately conduct safety planning and referral to specialized mental health services for at-risk participants.

2. Providing feedback from the week's observation, checking whether any of the other mentors are struggling with issues observed in the field, and planning any corrective action that should be taken.

3. Training on the specific activities/programming for the next week's upcoming sessions, as well as providing support for the mentors to make session plans.

Finally, refresher training exercises were held with a wider group, coinciding with the end of the initial and middle phases.