Charity Entrepreneurship

THINKING HEALTHY PROGRAMME

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CONSIDERED

Research Report:
Mental Health – Thinking Healthy Programme (2020 Considered Idea)

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This is a summary report about the Thinking Healthy Programme, a potential intervention for improving mental health and subjective well-being. Due to concerns over cost-effectiveness and the need to partner with existing programs, we do not recommend this intervention.

Thanks to Karolina Sarek, Erik Hausen, and Juliette Finetti for reviewing the research, and to Antonia Shann, Urszula Zarosa, Fin Moorhouse, and Patrick Stadler for their contributions. We are also grateful to the four experts who took the time to offer their thoughts on this research: Jerome Galea, Brendan Eappen, Vikram Patel and Ken Carswell.

For questions about the content of this research, please contact George Bridgwater at george@charityscience.com. For questions about the research process, charity recommendations, and intervention comparisons, please contact Karolina Sarek at karolina@charityscience.com.

Charity Entrepreneurship is a research and training program that incubates multiple high-impact charities annually. Our mission is to cause more effective charities to exist in the world by connecting talented individuals with high-impact intervention opportunities. We achieve this through an extensive research process and through our annual Incubation Program.

Research Process

Before opening the report, we think it is important to introduce our research process. Knowing the principles of the process helps readers understand how we formed our conclusions and enables greater reasoning transparency. It will also clarify the structure of the report.

Our research process incorporates elements that are well established in some fields but uncommon in others. This is partly because of the unique goals of our research (i.e. finding new areas for impactful charities to be launched) and partly because we incorporate lessons and methodologies from other fields of research, primarily global health and medical science. Below is a quick overview of some of the key elements.

Iterative depth: We research the same ideas in multiple rounds of iterative depth. Our goal is to narrow down our option space from a very large number of ideas (often several hundred at the start) to a more workable number for deeper reports. This means we do a quick 20-minute prioritization, a longer 2-hour prioritization, and finally an 80-hour prioritization. Each level of depth looks at fewer ideas than the previous round.

Systematic: The goal of our research is to compare ideas for a possible charity to found. To keep comparisons between different ideas consistent our methodology is uniform across all the different ideas. This results in reports that consider similar factors and questions in a similar way across different interventions, allowing them to be more easily compared. This is commonly used in other charity evaluations and encouraged in other fields.

Cluster approach: Comparing different intervention ideas is complex. We are not confident that a single methodology could narrow down the field, in part due to epistemic modesty. To increase the robustness of our conclusions, we prefer instead to look at ideas using multiple independent methodologies and see which ideas perform well on a number of them (more information here). These methodologies include a cost-effectiveness analysis, expert views, informed consideration, and using a weighted factor model. We explain the merits and disadvantages of each method, as well as how we apply it, in the linked documents. Each methodology is commonly used in most fields of research but they are rarely combined into a single conclusion.

Decision relevant: Our research is highly specialized and focused. We only research topics that are directly related to the endline choice of what charity to found. Sometimes cross-cutting research is needed to allow comparison between different ideas, but all our research aims to be directly useful to getting new charities started. This level of focus on targeted practical outcomes is rare in the research world, but is necessary to our goal of generating more charity ideas with minimal time spent on non-charity idea related concepts.

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Description of the intervention

The Thinking Healthy Programme (THP) is a manual-based intervention for perinatal depression that can be integrated into the routine care provided by community health workers (CHW). The manual was first developed by Atif Rahman in Pakistan but has since been adapted by the WHO for global use. As such the THP is one of the WHO's evidence-based Mental Health Gap Action Programme (mhGAP) interventions.

The program is designed to be integrated into maternal and child health care programs. It can be delivered by CHW with no previous knowledge or experience in mental health care after brief training (5-7 days). Training can be conducted by non-specialists with some experience of using THP in their work. A cascade model of supervision and monitoring can be used, whereby a specialist supervises a number of non-specialist trainers via Skype, who cascade this training to the CHW.

The intervention itself begins in the later stages of pregnancy and continues till one year postnatal. Participants receive sixteen sessions of therapy based on cognitive and behavioral techniques such as active listening. Sessions combine the therapy with other activities to improve maternal well-being, mother-infant interaction and maternal social support (Thinking Healthy Programme 2014). These initially take place on a weekly basis and then reduce in frequency to once every two weeks and then once a month.

Summary conclusion

We examined the THP and Thinking Healthy Program Peer delivery (THPP) in this report. Overall we found that the THP is among the strongest interventions in the Mental Health space. The existing evidence base examines the THP and its derivatives in similar contexts to where this charity might be operating. The strongest study, Rahman et al. 2008, examined the effects of the THP on 40 Union Council clusters in rural Rawalpindi, Pakistan. Given its effect on SWLS of ~3 points and its low estimated cost of ~$10 per beneficiary, this intervention has the potential to be very cost-effective. Our models suggest that it may be around two-thirds as cost-effective as our top idea, guided self-help, at $30.64 per point increase in the satisfaction with life scale (SWLS) each year.

Beyond this relatively high level of cost-effectiveness, there are a few remaining concerns that lead to this idea not being recommended. The first is the counterfactual cost of CHW time. As this charity would only provide training and monitoring of CHW, the direct cost of their time is not included in the organization's budget. It is then not clear what effect adding the additional responsibility to provide the THP would have on the number of CHW needed by other organizations or whether this would take time from other programs. This will vary greatly on the context but could reduce the positive impacts of other health programs. Modeling the cost of CHW time in our CEA raises by 40% the cost to increase participants' subjective well-being on the SWLS. This would reduce this intervention's cost-effectiveness from two-thirds to half that of our top idea.

The second major concern with launching this program is that the new organization will have to partner with an existing maternal health program. This barrier would increase the time between founding the charity and implementation. One of the first tasks for newly incubated charities is to pilot their program and start to develop a track record so that they can prove their effectiveness and acquire external funding. If this is not achieved quickly, as it would be in this case, the chance of failure will be significantly higher.

When compared to our other interventions this intervention appears less cost-effective and has additional concerns such as the ability to partner with maternal health programs. These factors are significant enough that this intervention will not be among our top charity ideas this year.

The table below offers a step-by-step summary of our research process for this intervention. Color-coding reflects how well the intervention performed at each stage. The idea sort, idea prioritization, and supporting reports involve background research that will not be considered in the final decision on the promise of this intervention.

Report type	Summary results	Deeper reading
Idea sort	During the idea sort this idea showed moderate initial promise. It scored well on the weighted factor model, moderately in cost-effectiveness, and above average for informed consideration.	Full report Process
Idea prioritization	After two hours researching the cost-effectiveness of this idea, it was the third strongest on the list for total and intervention cost-effectiveness (where intervention cost-effectiveness excludes staff, logistical, and counterfactual costs).	Full report Process
Prior view (section 1)	Our knowledge of this area before starting our deep research reports was informed by our initial methodologies, therefore we had relatively limited background knowledge.	Process
Informed consideration (section 2)	Our undirected research hours were spent investigating variations of the THP, viable locations, and community health worker attrition rates.	Process
Expert view (section 3)	Experts who had worked on scaling up this intervention in the past thought it would be a promising intervention to scale up in another country. However, a common critique was that focusing on individual packaged interventions would limit the scope of the charity and that these would be less generalizable outside of their original context. Experts who were familiar with multiple interventions were more positive towards others, including one of our other potential interventions, guided self-help (ultimately selected as our 2020 top recommendation in this cause area).	Process
Weighted factor model (section 4)	Overall, the weighted score of this intervention was 33/50. The score can be broken down as follows, with the weighting of each criterion in parentheses: 7/10 for strength of the idea (2), 6/10 for limiting factors (1.5), 7/10 for execution difficulty (1), and 6/10 for externalities (0.5). This intervention looks promising when examining multiple aspects of the weighted factor model. It has a solid evidence base and WHO backing of the program should help	Process

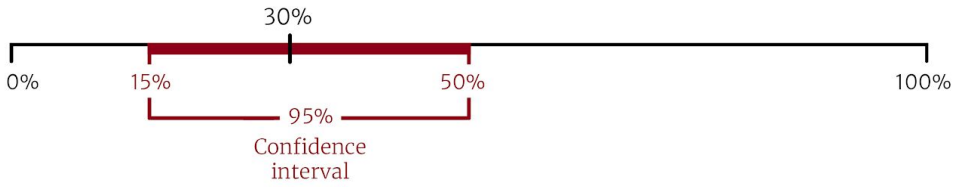
	with fundraising. There are still concerns about externalities, as the value of the secondary effects depends on the moral weight assigned.	
Cost-effectiveness analysis (section 5)	Although this intervention looked highly cost-effective earlier in the research process, its cost-effectiveness is weaker than other interventions explored in our eighty-hour reports. Cost-effectiveness reduces further if we model the costs of lay health workers' time.	Process
Supporting reports	Two supporting reports are applicable to this idea. Our metrics report (forthcoming) examines different quality of life measures and discusses why the metrics used in this report were selected. Our cause area report explains why we think mental health and subjective well-being is a promising area to research.	Metrics Cause area Process

1 Prior view

This brief section summarizes our team's thoughts on this intervention before starting in-depth research.

This intervention is likely to perform well on all four of our research methods. Our only concern with this program is counterfactual replaceability. Unless the WHO plans to scale up this program in as many countries as possible, we expect that this could be a 2020 recommended charity idea.

Subjective likelihood of recommendation:



1.1 Informed consideration

Given its proven track record we expect that this program is unlikely to have many significant weaknesses at this stage. The sole concern with this intervention may be the WHO's existing efforts to use this model. If the WHO is planning to scale this program, this may remove the need for a new charity in some countries. A priori, however, it seems unlikely that the WHO's program will reach a large enough scale to cover all regions.

1.2 Expert view

We expect that experts would view this intervention very favorably. The low cost and large existing trial (Rahman et al. 2008) will give them high confidence in this model of delivering CBT. It is possible they may be less favorable toward a new organization implementing this idea if they think that the WHO largely has this covered.

1.3 Weighted factor model

We expect the evidence base for the Thinking Healthy Programme to be quite strong as it utilizes and adapts CBT, which has a very strong evidence base. There has already been a large randomized trial of this intervention (Rahman et al. 2008). As mentioned above, counterfactual replaceability may be the main limit to the

potential impact of this charity idea. We expect all other factors to be comparable to our other mental health charity ideas apart from funding, where the face to face delivery of therapy and the focus on new mothers could increase the emotional appeal.

1.4 Cost-effectiveness analysis

This idea scored in the 5th percentile during the two-hour idea prioritization CEA. The high cost-effectiveness largely depends on the incredibly low cost per patient per year reported by the Mental Health Innovation Network (MHIN) [1] of $10. This figure makes it incredibly likely for the Thinking Healthy Programme to be among the most cost-effective interventions we examine.

We expect that this intervention will look even more cost-effective after creating the twenty-hour CEA, as at both previous stages the effect on childhood development was not modeled. However, it is also possible that upon closer examination the $10 cost reported by the MHIN is an underestimate, reducing its cost-effectiveness.

2 Informed consideration: Crucial considerations

After the prior view, we began the research process by identifying crucial considerations for self-help. In this early phase, we investigated the following to get an overview of this intervention and which countries it could operate in:

- There are multiple different models for the Thinking Healthy Program (THP). How similar are these variations? Does any one variation stand out as the best?
- How large are the effects of the program on other outcomes?
- Is Lay Health Worker (LHW) turnover high enough to create an ongoing need to train new staff, increasing program costs?
- How easy is this to implement outside of Pakistan?
- What is the counterfactual use of CHW time?

2.1 Model variations

There are five main variations or evolutions of the THP:

- Standard THP [2]
- THP Technology Assisted [3]
- Thinking Healthy Programme Peer delivery (THPP) [4]
- Thinking Healthy Plus (THPP+) [5]
- THP universal, also known as the '5 Pillars Approach to Maternal Psychosocial Well-Being' [6]

Standard Thinking Healthy Programme

The standard model for delivering the THP trains community health workers (CHW) over the course of 5-7 days. This training can be conducted by non-specialists with some experience of using THP. A cascade model is used whereby a specialist supervises a number of non-specialist trainers via Skype, and the non-specialist trainers cascade this training to the lay health workers [2]. This model of training costs $10 per woman treated for perinatal depression. The THP leads to the recovery in 3 out of every 4 women treated [2] but this is only a net increase 31% of compared to the enhanced usual care (EUC) control [7].

THP Technology Assisted

The technology assisted variant of the THP uses a technology-assisted assessment, cascade training and supervision (TACTS) system [3]. This system identifies beneficiaries through a mobile phone-based detection tool, and uses a tablet-based training manual to remove the need for specialist trainers. Instead, these specialists supervise the CHWs remotely. This results in a 37% reduction in training costs compared to the standard THP. Although we did not find any studies of the outcomes of such a program on rates of perinatal depression there is evidence to suggest this training model does not reduce the knowledge of CHWs. Rahman (2019) compared the TACTS to face-to-face training and found no significant difference in 'Enhancing Assessment of Common Therapeutic factors' (ENACT) scores, which is a Likert scale assessed by independent observers for treatment quality [3,8]. This suggests that using the technology-assisted variant of the THP may be a superior method of delivery compared to the standard THP.

Thinking Healthy Programme Peer delivery

A third variation of the Thinking Healthy Programme is peer delivery (THPP) [4]. Peers (i.e., other mothers) are trained over 5-7 days by non-specialists with some experience of the THP. Again, the cascade model of training and supervision is used, whereby specialists train non-specialists who in turn train peers. This reduces the cost of delivery compared to the standard THP to $1.36 per beneficiary [9]. Unfortunately the effect of the program on perinatal depression also falls. Fuhr (2019) found that 73% of women in the intervention group and 60% of women in the control group no longer met the criteria for depression after 6 months [10] – a difference of 13% compared to the regular program's 31% [7]. Another trial of the THHP from Sikander et al (2019) found that there was no significant difference between EUC and the THPP for remission rates or severity of depression 6 months after childbirth [11].

The THPP has the potential to be more cost-effective than the regular THP, but the effect may decrease more than the cost.

Thinking Healthy Plus (THPP+)

Another variation is the Thinking Healthy Plus (THPP+), another peer-delivered version but that extends the intervention to 36 months. The first study on the effectiveness of this approach was due to be completed around the end of 2018 [5]. However, no results have been published yet. This has the potential to be more effective than normal THPP but without published research any evaluation at this stage would be speculation. This may be a program that Charity Entrepreneurship

researches in the future, or that a new organization could pivot to if the published results suggest it would be more promising.

Thinking Healthy Programme Universal

The final variation is the THP universal, also known as the '5 Pillars Approach to Maternal Psychosocial Well-Being'. This variation alters the training program slightly to expand to all women living in conditions of psychosocial adversity. It does this by focusing on the 5 pillars, which include [6]:

- Empathic listening
- Family engagement
- Guided discovery using pictures
- Behavioral activation
- Problem-solving in day-to-day work

Training for this version of the THP adds an additional 1.5 days of training as part of a 5-day training program. Existing evaluations of this program have focused on the use of the five pillars by lay health workers rather than on outcomes for mothers [12]. This means that the evidence base for this approach is weaker and it should be reexamined in time.

Based on this preliminary research into the different variations of the Thinking Healthy Programme, three stand out as meriting further analysis: the standard, technology-assisted, and peer-delivered (THPP) versions. The technology-assisted and peer-delivered versions can reduce the costs of the program, although peer delivery may decrease the effect size. The evidence base for the other two versions we considered (THPP+ and THP universal) is not sufficient, but these methods of delivery will be worth reexamining once further evaluations are published.

2.2 Program effects on other outcomes

Perinatal depression is associated with a variety of negative outcomes in addition to harming the well-being of the mother, including delayed infant growth [13] and poor health and development [14]. This intervention thus has a large potential in terms of positive flow-through effects. However, existing studies show that the THP does not have an effect on some of these factors. For example, Rahman et al (2008) found that the program had no significant effect on weight or height-for-age Z scores for infants [15]. Although, in a later review in 2013, Rahman writes: 'Where assessed, benefits to the child included improved mother-infant interaction, better cognitive development and growth, reduced diarrhoeal episodes and increased immunization rates' [16].

The THP has been shown to have a variety of other health benefits outside of childhood development. Rahman et al (2008) [7] found that the THP had significant effects on diarrhoea episodes, immunization rate, contraceptive use, breastfeeding rates and mother, father, and child play frequency. Immunization and contraceptive use is the most significant as the rate of both increased by 9%. This is a significant effect for immunization, exceeding the increase achieved by Charity Science Health [7,17] (although at many orders of magnitude higher cost). The 9% increase in contraceptive use for ~$10 results in one unplanned birth averted for between $625 and $1,100 depending on the context, which is between ten and twenty times less cost-effective than the top family planning interventions.[1]

In addition to this, the Thinking Healthy Programme also has an effect on the proportion of women in debt and financial empowerment. Rahman et al (2012) found that at follow-up, a significantly higher proportion in the intervention group (33.9%) were no longer in debt compared with 23.6% of the control group. This increase was mirrored for financial empowerment, with 40.3% in the intervention group and 29.0% in the control group reporting being financially empowered at 6 months.

2.3 Lay health worker attrition

High turnover among lay health workers would increase the need for training, and may thus reduce the cost-effectiveness of this program. As such, attrition rates for health workers is a crucial consideration.

CHW attrition rates vary widely between regions, making it very difficult for systematic reviews to provide a precise figure. For example, the Plurinational State of Bolivia noted a 43% attrition rate, while a female community health volunteer program in Nepal had less than 5% annual attrition [18]. Variation exists even within programs with low attrition rates like Nepal, where seven districts reported turnover rates of 40–55%. The attrition rate seems to be comparable for the peer support used by THPP. In Pakistan, about 70% of the peer volunteers continued to be part of the program after 5 years [19].

[1] Note that modeling unplanned births averted in addition to increase in contraceptive use allows for better cross-comparison of family planning interventions and better captures the impact of an intervention on outcomes we care about, such as women's health and well-being. For more information on quantifying the cost-effectiveness of family planning interventions, see this report, produced in tandem with our 2020 research into family planning.

Additionally, what data is available seems to suffer from unreliability. In one instance, "monthly data showed that 439 lady health workers had left the programme between 1996 and 2008, whereas the annual data showed that 426 lady health workers had left in just five years" [18].

Overall it seems that total annual attrition rates varied between 3% and 44%, with the average being approximately 6.8% [20]. Although high attrition could decrease the effectiveness of this intervention, it seems that with proper country and region prioritization, attrition rates are unlikely to have a significant effect on the program.

2.4 Location selection

Unless this intervention relies on peer delivery (e.g. the THPP model), it can only operate in countries that run CHW programs like the one in Pakistan, where the initial trial was done. Fortunately, multiple countries have adopted the CHW model. In 2011 there were a total of 1,369,772 CHWs worldwide [21]. National programs for CHWs exist in Bangladesh, Thailand, Brazil, Haiti, Ethiopia, Mozambique, and Pakistan [22]. There are other national or local programs in Zaire, Nigeria, Uganda, Ghana, Botswana, Nepal, Sri Lanka, Columbia, Burma, Iran, India, and China [23]. Some of these programs will not focus on maternal, child, and newborn health but it is likely that this intervention could be successful in multiple countries besides Pakistan.

2.5 Community health worker counterfactuals

In Pakistan, CHWs visit an average of 27 households per week and work an average of about 5 hours a day, for 6-7 days a week. Populations served by CHWs have substantially better health than those without, including an 11% increased likelihood of using modern family planning methods and a 15% increase in immunization coverage among children younger than three. The most frequent CHW services are hygiene promotion, vaccination promotion, and family planning services. CHWs also frequently support other health campaigns, such as polio campaigns [23].

For peer-delivered programs (THPP, THPP+), volunteer peers perform the work. In Pakistan, they work alongside CHWs, who help provide access for the depressed mothers by referring them to the volunteers. The houses of CHWs are sometimes also used to host group sessions [24]. In India, the THPP seems to have made almost no use of CHWs, instead relying on antenatal clinics and primary healthcare centres

for referral of women to volunteer peers [25]. Since in Pakistan the THPP uses little CHW time and in India it appears to use almost none, it is likely that the counterfactual costs of using CHW time is low for the peer-delivered programs.

The standard THP is delivered directly by CHWs. It has been reported that "efforts to integrate the intervention at scale into the routines of community health workers who delivered the THP [...] were compromised by the competing responsibilities of community health workers" [25]. Another researcher writes "[...] community health workers (CHWs) in LMIC may be overburdened. This is particularly the case in countries like Pakistan, where lady health workers [...] are drafted to work in other priority programmes like dengue, tuberculosis and polio prevention" [26]. It is understandable that the THP is time-consuming for CHWs, since it consists of sixteen sessions over eleven months. This is more than usual, since Rahman et al. write: "In practice, the Lady Health Workers seldom provide such structured and monitored care in the community." [6]

The evidence presented above suggests that delivery of the THP may be somewhat of a burden on the time of some CHWs. This might result in difficulties implementing the THP properly at scale. More speculatively, it could also have a negative impact on other health interventions such as vaccination campaigns, if it diverts CHW time away from these activities.

3 Expert view

This section summarizes conversations between the lead researcher and a range of experts, mostly consisting of university professors who have been involved with implementation of the THP or other similar low-intensity interventions.

Opinions of experts were divided about the relative promise of this intervention. Those who had directly worked with the THP were positive towards the idea of another organization implementing it. Those who had worked briefly with the THP or who were more familiar with global mental health and the WHO mhGAP intervention as a whole thought that delivering just the THP would be less impactful. They advised us to deliver the THP as part of a package of mental health interventions integrated into primary care.

Professor Jerome Galea

Profile: Dr. Galea's research focuses on understanding the mediating factors that promote or inhibit the knowledge, access and uptake of existing and novel HIV and sexually transmitted infection interventions and, more recently, low-intensity mental health interventions. His mental health research includes exploring interventions for patients with tuberculosis and depression; the implementation of community-based, non-pharmacological depression interventions; and increasing the uptake of existing depression care services by modifying inhibitory social norms. Between 2010 and 2017 he worked with Partners in Health and Socios En Salud in Peru, where he oversaw the implementation of the THP.

Summary: Having worked on this intervention in Peru, Jerome had a very positive view about the prospect of a new organization implementing this. As one of the WHO's mhGAP interventions it is easier to gather support for and is very simple to teach to LHW. He suggests that a new organization should try to integrate the program into existing health services rather than try to run it independently.

More information can be found in the conversation summary.

Brendan Eappen

Profile: Brendan is currently attending Harvard Medical School while serving part time as the Chief Strategy Officer for Fortify Health, which he co-founded in 2017. He was interviewed in this report for his prior experience working with Partners in Health in Peru, primarily on the Thinking Healthy Programme.

Summary: Brendan was able to give more of an overview of charity entrepreneurship-specific considerations. such as how successful two people coming out of the Incubation Program would be at partnering with existing CHW programs. He thought this could be a barrier but less so than partnering with mills has been for Fortify Health. He also shared our concerns about the counterfactual use of CHW time although highlighted that this is very context specific. In general, when compared to other interventions he had examined in the space he thought it looked very promising.

More information can be found in the conversation summary.

Professor Vikram Patel

Profile: Vikram is The Pershing Square Professor of Global Health in the Blavatnik Institute's Department of Global Health and Social Medicine at Harvard Medical School. He is an honorary professor at the London School of Hygiene & Tropical Medicine (where he co-founded the Centre for Global Mental Health in 2008), and is a co-founder of Sangath. He also works in the areas of child development and adolescent health. He was listed in TIME Magazine's 100 most influential persons of the year in 2015.

Summary: Vikram highlighted concerns with the generalizability of 'packaged' mental health programs like the Thinking Healthy Programme. He argues that as these sorts of programs are designed around a very high level of cultural sensitivity they are much less likely to generalize. Instead we should use psychological science to distill these programs and other interventions to the fundamentals that generalize. Instead of focusing on the THP we should be supporting the scaling up of brief psychological treatments based on CBT for mothers with depression without the branding.

More information can be found in the conversation summary.

Professor Ken Carswell

Profile: Ken Carswell is a UK trained Clinical Psychologist with a background in transcultural mental health care, global mental health and trauma, including research and publication in these areas. Since 2015 he has been working with the WHO on scaling psychological intervention programs, one of which is the Thinking Healthy Programme.

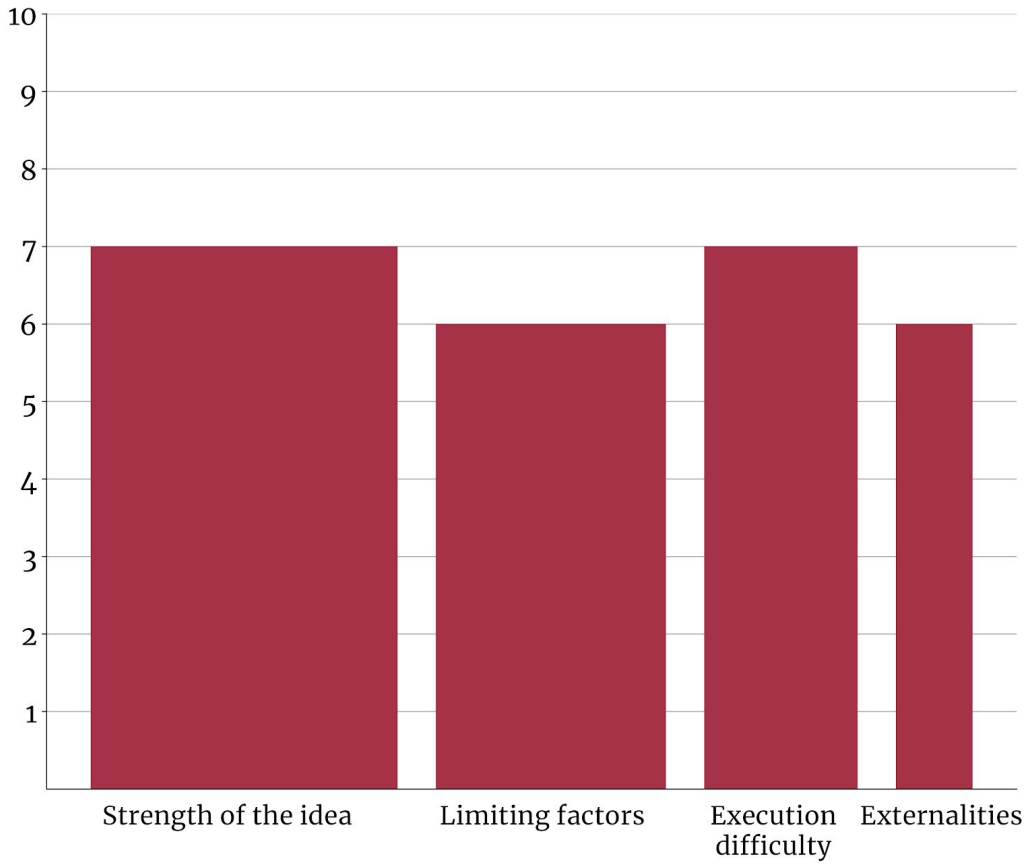
Summary: Ken encouraged us to expand our model for the THP to a domain rather than a single intervention. He suggested that a more promising version of this charity idea would be delivering evidenced-based psychological therapy which may involve multiple interventions. As Ken has a background in multiple WHO interventions we discussed the Thinking Healthy Programme in relation to other interventions explored in our 2020 research, specifically guided self-help. Overall, he thought our model for guided self-help was more promising.

More information can be found in the conversation summary.

4 Weighted factor model

In this stage of research, we scored the intervention based on preset criteria and weightings. We also generated a causal chain.

The graphic below shows the intervention's score out of ten on each criterion. Width of the bars reflects the weight accorded the criterion within the overall score of 33/50:



The Thinking Healthy Programme is one of the most well evidenced single interventions we have examined in our 2020 research period. Multiple RCTs examine its effect on depression in LMIC.

A potential failure point for this organization would be the necessity to foster relationships with existing CHW programs. This has been successfully achieved by Socios En Salud in Peru but would slow the charity down in its first year, a period in which it is vital to establish a track record. If necessary it would also be possible to pivot to the peer delivery model, which does not require a partnership with a CHW program.

The largest factor revealed by our weighted factor research is the magnitude of externalities. For most interventions in mental health, externalities tend to be much smaller in scale, but in this case the family planning effects have the potential to dwarf the main effect. If we value outcomes like female empowerment and its flow-through effects, or a lower birth rate, this is a significant benefit. However, this judgment depends highly on one's ethical perspective.

4.1 Strength of the idea

Score: 7/10

The Thinking Healthy Program is based on cognitive behavioral therapy (CBT), which has been extensively researched. It can be used effectively to treat depression in adults in many cultural contexts [34]. The delivery of similar psychosocial interventions for common perinatal mental disorders by nonspecialists has also shown some success [35].

The exact method of delivery used by the THP and structure of training differ significantly from a traditional clinical context. Fortunately, several RCTs examine the effect of the THP and the peer-delivered THPP. The THP has been examined most extensively in Pakistan [7][29] although there have been some small pilots in other countries such as Vietnam [36]. We found two RCTs of the THPP in India [37] and Pakistan [11] showing a 0.37 and 0.22 effect size on the PHQ-9 respectively, considered a small effect. The use of technology to assist in training LHW and reduce costs has been researched by Zafar et al (2016) [38] and Rahman et al. (2019) [8] . They both found LHW knowledge was equal between face-to-face and TACTS (technology-assisted assessment, cascade training and supervision) delivery but they did not measure outcomes on depression so we are less certain of this.

Most variations of the THP are well evidenced and effective methods for reducing depressive symptoms. It is likely one of the most well evidenced task shifting models available in this regard. It can be provided cheaply and was found to be highly cost-effective in both the two hour [8,39] and the twenty hour CEA (discussed in section 5). However, we have remaining concerns about the program's effect on subjective well-being. Although we expect a reduction in depressive symptoms and remission rates to translate into improvements in subjective well-being, converting between metrics gives us less confidence in the effect size.

4.2 Limiting factors

Score: 6/10

Although this intervention is likely to be marginally less cost-effective than other interventions we explored in this cause area, its association with the WHO and target demographic will likely make fundraising easier. A branded program backed by the WHO will look more promising to local governments and funders. Targeting only perinatal women could restrict funding; however, as discussed above, the THP has effects on multiple outcomes of interest, most notably financial empowerment and contraceptives use. These effects could be valuable to pitch to funders interested in these outcomes.

Whether talent is a limiting factor will depend on the country that the intervention takes place in. For instance, if English or Spanish is spoken in the targeted country, it will be possible to hire the specialized CBT training staff from a large talent pool. If the lay health workers being trained speak less widely known languages, this could restrict the number of potential applicants.

Country selection should also be used to avoid problems with counterfactual replaceability. For example, the program has been delivered in Pakistan for over 5 years [19], and there are existing efforts to bring it to scale. By contrast, in other countries with maternal health programs such as South Africa [40] we found no indication of existing programs in our initial brief search.

4.3 Execution difficulty

Score: 7/10

There is already a significant amount of research, several potential advisors, and manuals [41] to guide the entrepreneurs. This should make it much easier for them to run the program to its full potential. Even if it were to operate outside of the most well researched regions (i.e., Pakistan and India) there has already been some work done for cultural adaptation. Fisher et al (2014) tested a translated and culturally adapted version of the THP in Vietnam[36,41]. Another nonprofit organization, Socios En Salud, has already implemented the THP outside of its original context [42]. They used the Replicating Effective Programs (REP) framework to guide implementation, which will also be available to our entrepreneurs.

The biggest potential failure point is coordinating with the existing LHW program. If the co-founders are unable to establish a relationship with key stakeholders within the government then it will not be possible to train LHW. This will be

particularly difficult for a new organization with no track record however it is still possible to pivot into the THPP model. Some existing organizations have already had some success with this such as Socios En Salud. Other LHW programs such as the women for health operating in Nigeria are partially funded by UK aid [44] which may make them more open to cooperation.

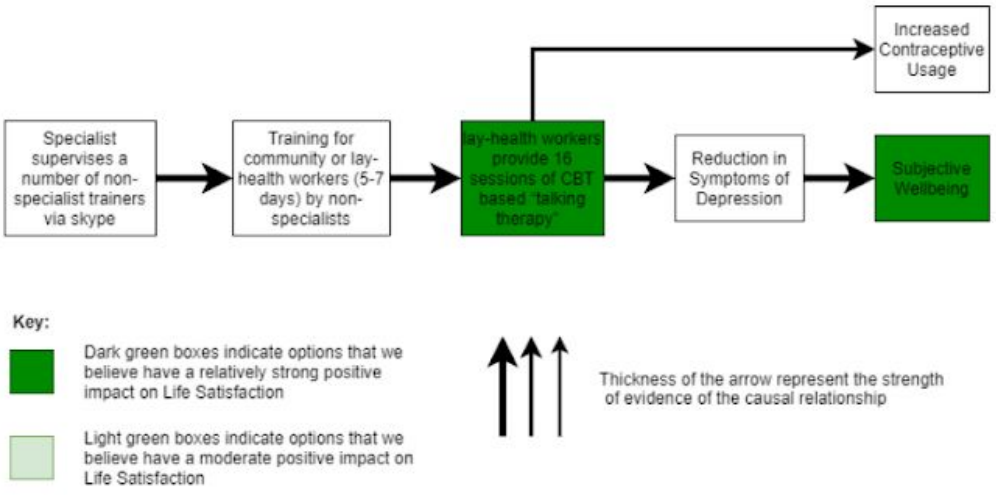
4.4 Externalities

Score: 6/10

As discussed in the crucial considerations, there are several additional effects outside of the direct effect on the mothers well-being, including on contraceptive use, financial empowerment and debt, and immunization. The most significant of these is contraceptive use, which could have a large effect if it prevents the birth of a child. In the cost-effectiveness analysis the cost per unintended birth averted was ~$600, which is roughly ten times the cost of the best family planning interventions. Although not highly cost-effective in this regard, this is nonetheless a significant effect. Whether the effect of reduced fertility is a positive externality depends on one's view on population ethics.

Given the current imbalance between disease burden and efficiently allocated spending [45] we expect global mental health to become an increasingly important area of focus over the next ten to fifty years. Founding a charity now could thus be expected to have a disproportionate influence. However, other organizations are likely to have a much greater effect, such as the Center for Global Mental Health [46] which has been operating for over ten years, or the Happier Lives Institute, which has a more explicit aim to move funds to more effective areas. We expect implementation focused organizations to have relatively little influence in such a well established field.

4.5 Causal chain



5 Cost-effectiveness analysis (CEA)

This section summarizes our CEA, which weighs the costs of running this intervention against the QALY and subjective well-being benefits.

5.1 Overview

Our models suggest that the Thinking Healthy Program has the potential to be highly cost-effective. However, significant uncertainty remains, particularly concerning the counterfactual value of community health workers' time. Estimates vary widely depending on the method of delivery, ranging from $23 to $310 per annual point increase on the SWLS. Additionally, as there are no studies examining the direct effect of the THP on subjective well-being it was necessary to convert from other metrics. This gives us less confidence in the program's effect on subjective well-being. An additional concern is highlighted in scenario 4 where we include the family planning effects. These have the potential to dwarf the effect on the mother's well-being, but whether and to what extent we value such flow-through effects will depend on one's moral framework.

It is also worth noting that only one of our cost-effectiveness analyses incorporates the counterfactual costs of community health workers' time.

Different Methods of Delivery

We model five methods of delivering the Thinking Healthy Programme, exploring the cost-effectiveness of scenarios with different types of support and with different outcomes considered. All scenarios are examined according to total and intervention cost-effectiveness, where intervention cost-effectiveness excludes staff, logistical, and counterfactual costs. This is so that when comparing to other interventions it is possible to tell if a poor overall estimate is due to a low scale and therefore relatively fixed costs, or due to a weakly cost-effective intervention. Each scenario has been modeled given the parameters of the respective study and is therefore located in that region.

Scenario 1: The standard Thinking Healthy Programme.

Scenario 2: The standard Thinking Healthy Programme with government staff counterfactual time costs included, using GiveWell's estimate [24].

Scenario 3: Thinking Healthy Program Technology Assisted, which has the potential to reduce training costs without reducing the effect size.

Scenario 4: Thinking Healthy Programme Peer delivery. A variation of the THP that uses peers to deliver the intervention instead of LHW.

Scenario 5: The standard Thinking Healthy Programme, but modeling the effect on contraceptive usage and unintended births averted.

Further information about the different variations of the Thinking Healthy Programme, and explanation of the selection of standard, peer-delivery, and technology-assisted versions of the program, can be found in the crucial considerations section of this report.

Scenario and estimate	Guesstimate SWLS Model	Google Sheet SWLS model	Google Sheets QALY model
Scenario 1 total estimate	**32 (-110 to 240)**	**30.64**	**12297**
Scenario 1 intervention estimate	11 (6.1 to 19)	10.09	333
Scenario 2 total	**78 (-160 to 580)**	**47.21**	**-4154**
Scenario 2 intervention	16 (9.5 to 27)	14.94	525
Scenario 3 total	**23 (-120 to 160)**	**17.66**	**2687**
Scenario 3 intervention	7.6 (4.2 to 13)	5.96	229
Scenario 4 total	**310 (-200 to 3100)**	**309.24**	**-808**
Scenario 4 intervention	23 (12 to 48)	21.31	780
Scenario 5 total	**n/a**	**-4.50**	**-34.84**
Scenario 5 intervention	n/a	-4.30	-22.39
Scenario 5 intervention (welfare points)	n/a	133	133

We took into account the following factors in our CEA:

- Direct effects
- Family planning effects
- Costs
- Counterfactual costs
    - Funding counterfactual cost
    - Staff counterfactual cost
- Affecting factors
- Assumptions and limitations

5.2 Direct effects

Detailed figures for the following considerations (including ranges) can be found in our Guesstimate models, linked in the table above.

The direct effect of the program is the effect of low intensity CBT provided by CHW on subjective well-being. The overall effect was calculated from a variety of factors but most prominently:

- The effect of depression on life satisfaction (SWLS):
    - Meyer et al (2004) [25]
    - Gigantesco et al (2019) [26]
    - Vázquez et al (2012)[27] and Chaves et al (2016) [27,28]
- The effect of the Thinking Healthy Programme on depression:
    - Rahman et al (2008) [7] and Rahman et al (2012) [29] for the THP
    - Fuhr et al (2018) [30] and Sikander et al (2019) [11] for the THPP

The direct effect of this intervention was estimated by converting between the increased number of beneficiaries no longer classified with depression between the control and treatment groups. This has several potential problems and relies on multiple assumptions (discussed below) but in the absence of evidence on the SWLS, this remains our best estimate for the SWLS effect of the program.

5.3 Family planning effects

Detailed figures for the following considerations can be found in our Google Sheets model linked in the table above.

The magnitude of the effects of the THP on contraceptives and the number of births is more uncertain. The most difficult aspect of this is weighting the moral

value of this outcome compared to the direct effects on subjective well-being. When modeled in scenario four, the effect on subjective well-being from years of life prevented is larger than the direct effect. If we think this averted life has equal moral value to lost life, as some views in population ethics would hold, then this intervention may well be net negative for subjective well-being. However, according to a person-affecting view, one cannot compare non-existing and existing individuals, and the good and bad experiences throughout one's life only have value for someone who already exists. Under this view, preventing a life from coming into existence would neither be good nor bad; it would be neutral. As this is a moral judgment, it has been modeled separately in scenario four to make clear the direct effects of this intervention and how the family planning effects may complicate it.

5.4 Costs

Detailed figures for the following considerations (including ranges) can be found in our Guesstimate models linked in the table above.

- Core staff costs: $134K
- Logistics & administration costs: $30K
    - Drawn from Charity Science Health's 2017 budget [31]
- Intervention cost
    - Assumed identical cost to MHIN [32] for THP
    - THP technology assisted reduces training costs by 31% [8]
    - Cost for THPP are from Fuhr et al (2019) [30]
    - Additional cost for CHW time modeled using GiveWell's estimate from their deworming CEA [24]

5.5 Counterfactuals

Detailed figures for the following considerations (including ranges) can be found in our Guesstimate models linked above.

- Funding counterfactual costs
    - Based on: amount of funding diverted per year from high- and medium-impact charities and the estimated cost-effectiveness of high- and medium-impact charities from the distribution of effects from our idea prioritization report [33].
- Staff counterfactual costs

- An estimate for the counterfactual cost of the co-founders and core staff had they been working at other organizations or earning to give. This will vary dramatically from between co-founders and staff members.

5.6 Affecting factors

Detailed figures for the following considerations (including ranges) can be found in our Guesstimate models linked above.

We conducted a sensitivity analysis (excluding counterfactuals) in Guesstimate. The inputs that each model is most sensitive to are shown in the table below.

	Affecting factor 1	Affecting factor 2	Affecting factor 3
Scenario 1	SWLS effect of depression (r^2 = 0.25)	Average years of effect for therapy (r^2 = 0.25)	Number of beneficiaries (r^2 = 0.06)
Scenario 2	Average years of effect for therapy (r^2 = 0.24)	SWLS effect of depression (r^2 = 0.19)	Number of beneficiaries (r^2 = 0.09)
Scenario 3	SWLS effect of depression (r^2 = 0.27)	Average years of effect for therapy (r^2 = 0.25)	Number of beneficiaries (r^2 = 0.09)

Each scenario is sensitive to the same three factors: average years of effect for therapy, number of beneficiaries, and the SWLS effect of depression. The estimate for the average years of effect for therapy has been estimated to be slightly lower in this model compared to our other interventions, as we expect perinatal depression to regress more naturally and mothers may have additional children, triggering another depressive episode. The average effect of depression is used to estimate the effect of the program and was itself estimated from several sources. It is plausible that this is larger than estimated here. Finally, the number of beneficiaries is not a concern as we also model the intervention cost-effectiveness (which ignores this figure), allowing us to compare interventions with and without an estimated scale.

5.7 Assumptions and limitations

We considered how our CEA could go wrong in each step. Some general potential issues, assumptions and limitations include:

- Effect is calculated by converting the effect on depression into the satisfaction with life scale. For this to be a valid method, we need to consider the following assumptions:
    - The effect of depressive symptoms below the cutoff point has no or much less effect on SWB
    - The distribution of SWB of those who do not meet the criteria for depression is the same before and after treatment. If diagnostics is done using a continuous scale which is linearly correlated with SWB then this would require treatment to have larger effects on higher scores.
    - This assumes that the distribution of scores below the cutoff stays the same after treatment or the effect of lower scores is much less. A diagram of this can be found here.

- Partnering and maintaining relationships with national community health worker programs can be achieved by a few key staff
- For all scenarios except scenario 2 we have assumed no direct or counterfactual cost for CHW time.
    - Our model for scenario 2 showed that incorporating counterfactual CHW time into our analysis significantly reduces the cost-effectiveness of this intervention. Given the likelihood that this time cost would be incurred, the impact of CHW time on this intervention's cost-effectiveness poses a significant concern when considering its overall promise as a new charity idea.

6 Informed consideration: Internal contemplation

In this stage, we analyzed all the data and insights gathered through previous steps in the research process. The most important conclusions from each are summarized here, as are our team's overall thoughts on this intervention.

6.1 Crucial considerations

A few factors had the potential to update us against this intervention at this early stage. Some of these still have the potential to limit the countries this organization could effectively run in, such as lay health worker attrition. However, none of our initial concerns presented an issue in all contexts.

We attempted to investigate what regions and the budget allocated to the THP by the WHO but we were unable to find any information. The biggest concern revealed by crucial considerations research is the effect on other outcomes (e.g. family planning), which we also investigated in the weighted factor model and cost-effectiveness analysis.

6.2 Expert view

Experts who had worked on scaling up this intervention in the past thought it would be a promising intervention to scale up in another country. The general trend was that experts who were familiar with multiple interventions were more positive towards others, including one of our other top interventions – guided self-help, which was ultimately selected as one of our 2020 charity recommendations. They still viewed the THP positively but did not think it would be the most impactful program to run. A common critique was that focusing on individual packaged interventions would limit the scope of the charity and that these would be less generalizable outside of their original context.

6.3 Weighted factor model

Multiple studies were found when reviewing the quality and quantity of evidence that examined the THP and its derivatives in similar contexts to where this charity might be operating. The THP is probably one of the most robustly good interventions available in global mental health, and has the backing of the WHO. Combined with its effect on multiple outcomes, this credibility would probably make it easier to fundraise for than some other intervention we are considering. Although there are a few potential pitfalls such as the need to partner with existing

CHW programs and externalities, the Thinking Healthy Programme performed well on our weighted factor model, with an overall weighted score of 33/50.

6.4 Cost-effectiveness analysis

We considered three variations of the THP in our CEA, including standard, technology assisted, and peer-delivery. We also modeled the family planning effects for the standard THP. All modeled variations of the Thinking Healthy Programme seem to be cost-effective ways of delivering psychological therapy. Each variation has its benefits and drawbacks but peer delivery seems to be the least cost-effective, as the effect on subjective well-being is lower than other methods of delivery.

6.5 Conclusion

The Thinking Healthy Programme is a strong, evidence-based intervention, particularly in its original context in Pakistan. It is among the most cost-effective interventions in mental health we have examined when only considering costs incurred through training. However, if the cost of CHW time is included, the model becomes much less cost-effective. Some additional concerns include the need to partner with an existing maternal health program. This may be achievable in the long run but it would delay initial implementation and make it much more difficult for the new charity to develop a strong track record, something that is essential for new organizations to achieve as fast as possible. Among other concerns, this means that although this is a strong intervention compared to a large variety of global mental health interventions, we do not recommend that a new charity modeled on the Thinking Healthy Programme should be founded in 2020.

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