

Developmental Health – addressing global mental health through technology

Introduction

This overview describes a set of technologies – *Developmental Health* – designed to bring effective and efficient mental health support to communities where no such services exist. DmH has two goals: (1.) to assist international development and aid workers to identify populations in need of mental health support services so that people and communities can transition from survival to *development-ready*, and (2.) to provide a platform for remote therapeutic services to those communities and individuals who have witnessed or survived traumatic events. DmH enables global mental health professionals to reach and serve communities in states of chronic trauma, and consequent chronic underdevelopment. This work is predicated on a 1999 study in *Journal of the American Medical Association*, which first made the link between trauma and psychiatric comorbidity to functioning and socio-economic disability in refugee populationsⁱ. This study, conducted by the Harvard Global Mental Health and Trauma (GMHT) group and expanded in 2001, demonstrating that chronic, disabling depression led to early mortality in refugee and civilian populations traumatized by war and other forms of mass violenceⁱⁱ.

Many communities are unable to take advantage of traditional development strategies due to the high level of mass trauma that must be addressed before traditional development efforts can succeed. These communities routinely suffer from many of the conditions that are known to cause Post-Traumatic Stress Disorder (PTSD), including natural disaster, robbery, assault, rape, neglect and physical abuse, civil conflict, life-threatening medical conditions, terrorist attacks and other extreme or life-threatening eventsⁱⁱⁱ. Research funded by the U.S. Department of Homeland Security and published in *Psychiatry* also supports this hypothesis:

“The resilience of communities, and consequently the wellness of communities, rests upon a network of adaptive capacities, particularly Economic Development, Social Capital, Information and Communication, and Community Competence... Thus, it is argued here that efforts to reduce risk and resource inequities, engage local people in mitigation, create organizational linkages, boost and protect social supports, cultivate trusted and responsible information resources, and enhance decision-making skills will augment more specific intervention efforts to promote safety, calming, efficacy, hope, and connectedness in the aftermath of mass trauma. Many of these outcomes require systems and social changes that can be the target of intervention efforts before as well as after disasters.”^{iv}

Global Mental Health

Mental health disorders are one of the leading causes of disease and disability in the world, and are devastating to communities and economies in LDCs. According to the World Bank, depressive disorders are now the fourth leading cause of the global disease burden, and will be ranked second by 2020, only outpaced by heart disease^v. The World Bank study goes on to state that mental health problems are not only major causes of lower quality of life, but that national mental health budgets are disproportionately small in relation to other diseases, especially in developing regions and the serious health consequences they pose^{vi}. The World Health Organization echoes the World Bank, stating that mental health issues are worse among the poorest sectors of the population, whose “lack of access to affordable treatment makes the course of the illness more severe and debilitating, leading to a vicious circle of poverty and mental health disorders.”^{vii} On top of that, the stigma and subsequent discrimination that those affected with

mental disorders face make seeking any available treatment challenging^{viii}. Poor mental health affects the economy, due to lost productivity and discrimination. In turn, this creates and worsens existing poverty^{ix}.

Global mental health professionals increasingly are recognizing the need to address the mental health challenges associated with regional conflict^x. Many cultures ostracize those in the community who are not able to function^{xi xii xiii}. Organizations including the Carter Center, the U.K.-based Department for International Development (DFID), and the National Institutes of Mental Health and have begun to invest in mental health research and programs in LDCs in support of community and regional development^{xiv xv xvi}. The PRogramme for Improving Mental health carE (PRIME), a DFID-funded program with over twenty health ministry and hospital partners in LDCs, outlines the negative cycle of poverty and poor mental health, stating that “Interventions are needed that address both the social causes of mental illness and the disabilities and economic deprivation that are a consequence of mental illness.”^{xvii}. The same report states that there is little knowledge about the kinds of interventions necessary to break this cycle^{xviii}.

There are no existing standards for diagnosis and treatment of mental health trauma in remote communities in the global mental health field, and there are only two offerings sanctioned by the UN – both from the World Health Organization. One is *Psychological First Aid: Guide for Fieldworkers*, a publication by the World Health Organization, WarTrauma Foundation and World Vision, which instructs first responders in crisis zones how to comport themselves and be of use to victims^{xix}. The other is the *mhGAP Guide*, which focuses on general mental, neurological and substance abuse issues, and is designed to be integrated into national-level health systems^{xx}. Neither guide provides instruction on working with marginalized populations that suffer from conditions endemic to poverty in LDC communities – what one Ugandan medical professional calls “mass trauma”^{xxi}. Mass trauma results from chronic low-level conflict conditions that are an inevitable outcome of the “endemic destabilization of Africa’s populations” which include ethnic rivalries, economic tensions, resource depletion and ideological struggles such as nationalism and religious fundamentalism^{xxii}. Additionally, there is no clear timeframe for engaging globally in a strategy for improving mental health in LDCs – the WHO states that addressing the burden of global mental health will require long-term investment, proposing that “substantial research progress can be achieved in the next ten years if funding begins immediately.”^{xxiii} The National Institute of Mental Health (NIMH) has created the Collaborative Hubs for International Research in Mental Health, which supports research on the use of non-specialist mental health-care providers in LDCs, but calls on the WHO, World Bank, foundations, nongovernmental organizations and the global business community to partner around the “grand challenge” of global mental health^{xxiv}. The NIMH effort claims that, “Even incremental progress in addressing the grand challenges in global mental health could lead to significant economic and quality-of-life benefits — including reductions in inappropriate use of health care and increased productivity for years to come — that would far outweigh investment costs”^{xxv}.

It is this very cost and accessibility that Information and Communication Technology can address. With the growth of ICT access in LDCs (most significantly in terms of cellular data coverage^{xxvi}), it will become feasible to offer online mental health services in LDCs. Already, there are thousands of mobile health (mHealth) initiatives in the Global South, supported by such efforts as the GSM Association’s mHealth effort and the mHealth Alliance^{xxvii xxviii}. Increasing network connectivity, lower cell phone and technology prices, and an emphasis on mobile health (although not mobile *mental health*) has led to so many mHealth projects that countries such as Uganda have placed a moratorium on new mHealth pilots until issues of interoperability and long-term support

have been determined^{xxix}. There remains a dearth of any applications that focus on mental health, given the constraints discussed.

However, outside of the Global South, online counseling has become more mainstreamed in the United States and Europe. For example, the US Department of Veterans Affairs provided 140,000 remote internet-based consultations in 2011 and expects to provide of 200,000 in 2012 – without a copayment charge for any telehealth services^{xxx}. There are several commercial online platforms for psychological services that have been endorsed by professional counseling and psychotherapy organizations^{xxxi xxxii}. The efficacy of online counseling has been debated for over two decades, but there appears to be consensus that the use of technology to reach those in remote regions, and to increase access to critical mental health information, is justified^{xxxiii xxxiv xxxv xxxvi xxxvii xxxviii}. This conclusion supports the introduction of such methods to provide mental health services in developing communities.

Objectives

A key objective of this research is to provide an effective and efficient mechanism for bringing mental health services to communities most in need, and thus raise the productivity, economic stability, and development future for these communities. This is a two-part objective, as described in the introduction: (1.) to assist international development and aid workers to identify the level of trauma in a community and thus tailor humanitarian activities accordingly, and (2.) to provide a platform for remote therapeutic services to those communities and individuals who have witnessed or survived traumatic events. Ideally, the DmH system will be used as an integrated solution that enables aid and development practitioners, community health workers or even military personnel to assess the level of trauma in a community and then to present options for focused psychological services; the two parts of the DmH can also be used separately as a tool to determine intervention strategies as well as a standalone therapeutic mechanism.

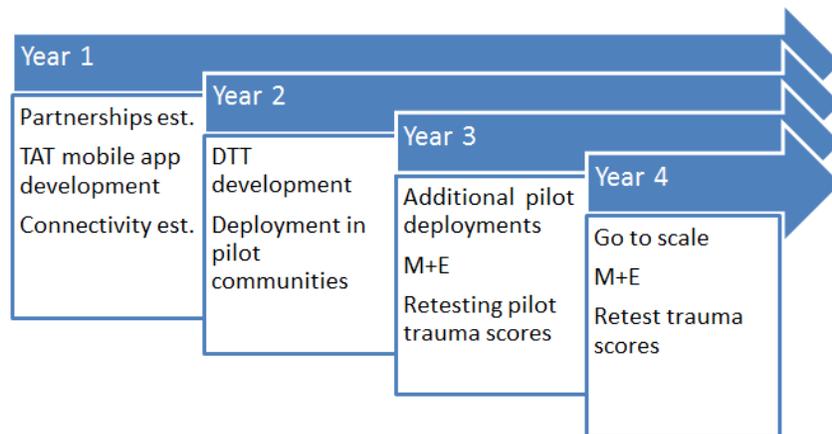
Trauma Assessment Tool (TAT): This tool will enable humanitarian and health workers to determine the likelihood of collective trauma in a community, and to recommend mental health interventions as opposed to “leapfrogging” to more traditional community development projects, aware that this community will likely not be able to benefit from, or participate in, higher-level development engagement. The TAT will lead administrators through a series of mental health indicator questions derived from the Hopkins Symptoms Checklist (HSCL), a well-known and widely used screening instrument^{xxxix}, translated into Urdu and Hmong and many other languages^{xl xli}, the 15-item War Trauma Experience Check-list (WTECL-15)^{xlii}, and the Harvard Trauma Questionnaire (HTQ)^{xliii} a reformulation of the HSCL that focuses on refugee trauma. Both of these instruments are considered best in class and correlate to DSM-V mental health diagnoses. The TAT survey will prompt the administrator to ask questions pertinent to screening for trauma and mental health conditions, and will calculate a trauma score that can be averaged over a number of community members.

Distance Therapeutic Tool (DTT): The DTT is a collection of technologies intended to support a variety of therapy options based on cultural appropriateness, network connectivity, and in-country therapeutic capacity of mental health service providers. There will be several modes that are possible with the DTT. Narrative therapy entails retelling a trauma story that empowers the individual, rather than further traumatizes them, and can involve artistic and occupational therapy components. Re-casting traumatizing events can lessen their power and help free people from cycles of victimhood. It can be done remotely with a script written by therapy professionals, or it can be conducted face to face when and if a therapist is available. Second, cognitive behavioral

therapy (CBT) can help move people from inaction to action in a short amount of time – 6-12 sessions – and thus help people participate in their own healing process. Again, there will be offline/asynchronous/real-time options depending on connectivity. Third, as many people suffering from mental illness demonstrate disassociation and depression that blunts gestures and speaking tone, the DTT can capture facial micro-expressions that will enable trained therapists to recognize emotional states that are otherwise obscured by the effect of depression and fear, such as indicators of hope or enthusiasm. Conversely, for those people who claim to be “fine,” these discreet expressions can show that there is more than meets the eye. \

Partnerships and Deployment

Given the increasing numbers of refugees and IDPs around the world, and the startling numbers of people who may yet be displaced due to forced, economic or climate migration, it is critical to offer those displaced more than temporary or stop-gap measures. Traumatized people are limited in their productivity, and often perpetuate traumas on their family members or those unable to defend themselves. The DmH system is a form of Action Research in practice – it aims to shift the mental health status quo to a higher level so that people are able to experience more than survival. The DmH will also serve as a forcing function to galvanize the very small global mental health and trauma community – many who have been informal advisors to this project idea – as well as put mental health on the map in a proactive mechanism, rather than waiting for instances of PTSD to become so widespread that renders development efforts useless. This project, grounded in Social Embeddedness and Social Drift theories, will test how well technology can gauge the collective mental health index of a community, as well as extend therapeutic services to those who need them the most. Longitudinal work with a traumatized community will show if interventions move the mental health needle, in turn reducing the burden of this widespread disease that is all too often ignored – but at a huge cost as outlined in this overview. The graphic below shows a rough projection of activities, with Year 1 focused on the TAT development, partnerships, and connectivity requirements, as many refugee and IPD communities have limited connectivity which will need to be addressed but could be the backbone for many additional services.



ⁱ Mollica RF, McInnes K, Sarajlic N, Lavelle J, Sarajlic I, Massagli MP. Disability associated with psychiatric comorbidity and health status in Bosnian refugees living in Croatia. *Journal of the American Medical Association.* 1999; 282: 433-439.].

- ii Mollica RF, Sarajlic N, Chernoff M, Lavelle J, Sarajlic Vukovic I, Massagli MP. Longitudinal Study of Psychiatric Symptoms, Disability, Mortality and Emigration Among Bosnian Refugees. *Journal of the American Medical Association*. August 2001; 286(5):546-554.]
- iii M. Friedman, T. Keane and P. Resick, *Handbook of PTSD: Science and Practice*, New York: The Guilford Press, 2010.
- iv F. Norris and S. Stevens, "Community Resilience and the Principles of Mass Trauma Intervention," *Psychiatry*, vol. 70, no. 4, pp. 320-329, 2007.
- v (<http://www.theepochtimes.com/n3/108595-untreated-mental-health-health-issues-a-global-reality/>).
- vi (<http://www.theepochtimes.com/n3/108595-untreated-mental-health-health-issues-a-global-reality/>).
- vii (<http://www.theepochtimes.com/n3/108595-untreated-mental-health-health-issues-a-global-reality/>).
- viii (<http://www.theepochtimes.com/n3/108595-untreated-mental-health-health-issues-a-global-reality/>).
- ix (http://www.who.int/mental_health/media/en/265.pdf).
- x World Bank, "Mental Health and the Global Development Agenda: What Role for the World Bank?," in *World Bank Interventions in Mental Health*, Washington D.C., 2003.
- xi V. Patel, *Culture And Common Mental Disorders In Sub-Saharan Africa*, London: Psychology Press, 1998.
- xii S. Fernando, *Mental Health, Race and Culture: Third Edition*, Houndmills: Palgrave Macmillan, 2010
- xiii J. Bass, P. Bolton and L. Murray, "Do not forget culture when studying mental health," *The Lancet*, vol. 370, pp. 918-919, 2007.
- xiv Carter Center, "Carter Center's Mental Health Work in Liberia Highlighted by New Foundation: Focusing Philanthropy," 1 May 2012. [Online]. Available: <http://blog.cartercenter.org/2012/05/01/carter-centers-mental-health-work-in-liberia-highlighted-by-new-foundation-focusing-philanthropy/>. [Accessed 25 May 2012].
- xv "PRogramme for Improving Mental health carE (PRIME)," 2012. [Online]. Available: <http://www.health.uct.ac.za/research/groupings/prime/about>. [Accessed 12 March 2012].
- xvi P. Collins, V. Patel, S. Joestl, D. March, T. Insel and A. Daar, "Grand Challenges in Mental Health," *Nature*, vol. 475, no. 7354, pp. 27-30, 2011.
- xvii C. Lund, M. De Silva, S. Plagerson, S. Cooper, D. Chisholm, J. Das, M. Knapp and V. Patel, "PRIME Policy Brief: Poverty and mental disorders: breakin the cycle in low-income and middle-income countries," 2012.
- xviii C. Lund, M. De Silva, S. Plagerson, S. Cooper, D. Chisholm, J. Das, M. Knapp and V. Patel, "PRIME Policy Brief: Poverty and mental disorders: breakin the cycle in low-income and middle-income countries," 2012.
- xix World Health Organization, *Psychological first aid: Guide for field workers*, Geneva: WHO, 2011.
- xx World Health Organization, *mhGAP Intervention Guide*, Geneva: WHO, 2010.
- xxi S. Musisi, "Mass trauma and mental health in Africa," *African Health Sciences*, vol. 4, no. 2, pp. 80-82, 2004
- xxii S. Musisi, "Mass trauma and mental health in Africa," *African Health Sciences*, vol. 4, no. 2, pp. 80-82, 2004
- xxiii (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3173804/>.)
- xxiv (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3173804/>.)
- xxv (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3173804/>.)
- xxvi (<http://www.un.org/apps/news/story.asp?NewsID=44371#.U44bg3JdUwA>
- xxvii (<http://www.gsma.com/connectedliving/mhealth/>
- xxviii (<http://mhealthalliance.org/>
- xxix (<http://www.bbc.co.uk/blogs/bbcmmediaaction/posts/Pilot-it-is-Whats-the-cure->
- xxx S. Hall, "VA to boost remote mental health services," 21 June 2012. [Online]. Available: <http://www.fiercehealthit.com/story/va-boost-remote-mental-health-services/2012-06-21>. [Accessed 28 June 2012]
- xxxi Behavioral Health Innovation, "Telemental Health Provider Networks," [Online]. Available: <http://www.telementalhealthcomparisons.com/provider-networks>. [Accessed 17 April 2012].
- xxxii Online Therapy Institute, "Online Therapy Institute's Trainings Receive BACP Endorsement!," 11 November 2010. [Online]. Available: <http://www.onlinetherapyinstituteblog.com/2010/11/online-therapy-institutes-trainings-receive-bacp-endorsement/>. [Accessed 28 December 2011].
- xxxiii P. Cuijpers, A. Van Straten and G. Andersson, "Internet-administered cognitive behavior therapy for health problems: a systematic review," *Journal of Behavioral Medicine*, vol. 3, no. 2, pp. 169-177, 2008.
- xxxiv E. M. Cohene, "An E-Health Community of Practice: Online Communication in an E-Health Service Delivery Environment," *Lecture Notes in Computer Science - Online Communities and Social Computing*, vol. 4564, pp. 395-405, 2007.
- xxxv M. Ybarra and W. Eaton, "Internet-Based Mental Health Interventions," *Mental Health Services Research*, vol. 7, no. 2, pp. 75-87, 2005.
- xxxvi Kraus, G. Stricker and C. Speyer, *Online Counseling, 2nd ed., Second Edition: A Handbook for Mental Health Professionals*, Salt Lake City: Academic Press, 2010.

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- ^{xxxvii} R. Hsiung, *E-Therapy: Case Studies, Guiding Principles, and the Clinical Potential of the Internet*, New York: W. W. Norton and Company, 2002.
- ^{xxxviii} K. Anthony, *The Use of Technology in Mental Health: Applications, Ethics and Practice*, Springfield: Charles C Thomas, 2010.
- ^{xxxix} (Parloff MB, Kelman HC, Frank JD. Comfort, effectiveness, and self-awareness as criteria for improvement in psychotherapy. *American Journal of Psychiatry*. 1954; 3:343-351.)
- ^{xl} Vang Leng Mouanoutoua & Lillian G. Brown. Hopkins Symptom Checklist-25, Hmong Version: A Screening Instrument for Psychological Distress. *Journal of Personality Assessment* Volume 64, Issue 2, 1995. P 376-383
- ^{xli} Hopkins Symptoms Checklist 25(HSCL-25) Urdu Translation: An Instrument for detecting Anxiety and Depression in Torture and Trauma Victims. A.A. Halepota, S.A. Wasif (Department Psychiatry, Dow Medical College and Civil Hospital, Karachi *Journal of Pakistani Medical Assoc.* July, 2001
- ^{xlii} *Afr Health Sci.* Sep 2008; 8(3): 136–141. Post traumatic stress disorder among former child soldiers attending a rehabilitative service and primary school education in northern Uganda. Emilio Ovuga,1 Thomas O Oyok,2 and EB Moro3
- ^{xliii} (<http://hpvt-cambridge.org/screening/harvard-trauma-questionnaire/>),