Dissemination and implementation of evidence based, mental health interventions in post conflict, low resource settings

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The burden of mental health problems in (post) conflict low and middle income countries is substantial. Despite growing evidence for the effectiveness of selected mental health programmes in conflict affected low resource settings and growing policy support, actual uptake and implementation have been slow. A key direction for future research, and a new frontier within science and practice, is dissemination and implementation which directly addresses the transfer of evidence based, effective health care approaches from experimental settings into routine use. This paper outlines some key implementation challenges, and strategies to address these, while implementing evidence based treatments in conflict affected low and middle income countries, based on the authors' collective experiences. Dissemination and implementation evaluation and research in conflict settings is an essential new research direction. Future dissemination and implementation work in low and middle income countries should include: 1) defining concepts and developing measurement tools; 2) the measurement of dissemination and implementation outcomes for all programming; and 3) the systematic evaluation of specific implementation strategies.

Keywords: dissemination and implementation science, low and middle income countries, mental health, post conflict, task sharing

Introduction
Background
The burden of mental health problems in low and middle income countries (LMICs) is substantial, with the gap between those who experience them and those who receive any type of treatment large. In these low resource settings, up to 90% of people needing care do not receive health services (Demyttenaere et al., 2004; Saxena et al., 2007; Thornicroft, 2007).

Stemming from the recognition of this treatment gap, a growing body of evidence for treatments within humanitarian settings, and the general prioritisation of mental health within the field of global health (WHO, 2008; 2009), there has been increased support for the use of evidence based treatments (i.e., those interventions that have been shown to be effective in randomised controlled trials) in these settings. For example, in the *Mental Health Gap Action Programme* (mhGAP) (WHO, 2010a; Barbui et al., 2010; Dua et al., 2011), a set of treatment recommendations based on syntheses of research literature, the World Health Organization endorses the use of some evidence based interventions as front line treatment for mental health problems.

Despite growing evidence for the effectiveness of some mental health programmes in conflict affected LMICs and growing policy support (e.g., mhGAP), actual uptake and implementation by governments, nongovernmental organisations (NGOs), and community based organisations (CBOs) have been slow (Thornicroft et al., 2010).

Notably, high income countries have also documented significant challenges with dissemination and implementation (DI) of evidence based treatment (EBT) (Shafran et al., 2009). As a result, it is clear that one key direction for future research, and the next frontier within science and practice, is how effective treatments can actually be implemented in real world health and community settings.

Dissemination and implementation science

DI science is an emerging field that directly addresses the transfer of evidence based, effective health care approaches from experimental settings into routine use (Peters et al., 2013; Rubenstein & Pugh, 2006; Thornicroft, 2012; Thornicroft, Lemp, & Tansella, 2011). Dissemination may be defined as '*an active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies*' while implementation is described as '*the process of integrating evidence based interventions within a setting*' (Brownson, Colditz & Proctor, 2012, p.26). While the translation of evidence based interventions into practice, to improve overall public health outcomes, is a common theme for NGOs, governments and funders, actual knowledge and evaluation of the *process* of how to disseminate information and support the use of programmes is less developed.

In a brief overview of implementation science, Proctor and colleagues (2009) clarify that two important pieces are needed for effective DI: 1) an evidence based treatment or programme, and 2) a method, plan, or '*technology*' for implementing the evidence based intervention in routine practice. The idea of an '*evidence based intervention*' within DI can be quite broad and includes practices, processes, policies, guidelines, treatments and programmes. These may each have different levels of evidence, depending on the programme and the problem it addresses.

Within health, there is literature documenting the various levels of evidence, with randomised controlled trials (RCTs) considered to be important and one of the '*highest*' levels of evidence (Centre for Evidence-Based Medicine, http://www.cebm.net; Burns, Rohrich, & Chung, 2011; Tansella et al., 2006). Current recommendations focus less around a particular time when an intervention is '*ready*' or has enough evidence to move to DI examination, and more around building hybrid studies that examine implementation challenges, processes, and outcomes during effectiveness evaluations (Curran et al., 2012).

Many different conceptual models have been designed and researched to better understand the multiple factors that affect the implementation and dissemination of EBTs (e.g., Tabak et al., 2012; Proctor et al., 2009; Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009). Most models conceptualise the importance of the multiple '*layers*' involved in ultimate delivery of EBTs in real world settings and the need to consider each of these layers carefully. For example, one model describes three general layers: 1) *Policy* – including legislatures and governments; 2) *Organisations* – including decision making processes, leadership, and organisational culture and climate; and 3) *Individual* – including providers and consumers individual and/or group behaviours (Shortell, 2004; Proctor et al., 2009). There is also general agreement that it is crucial to consider dissemination and implementation over time: from pre-implementation (and adoption in principle), early/mid implementation, and longer term maintenance and sustainability implementation to maintenance (Aarons et al., 2011). Furthermore, the emerging DI field has started to hone in on selection and measurement of some of the key indicators of success of implementation processes (see Table 1). Figure 1 is a reprint of the Proctor et al. (2009) conceptual model that shows one example of how an evidence based intervention, DI strategies and DI outcomes fit together.

Table 1. Key indicators for Dissemination and Implementation outcomes

Dissemination and implementation outcomes	Definition
Acceptability/satisfaction	The perception that a given EBT is agreeable, palatable, or satisfactory
Adoption/uptake	The intention, initial decision, or action to try or employ an EBT
Appropriateness	The perceived fit, relevance, or compatibility of the EBT: 1) for a given setting, provider, or consumer; or 2) to address a particular issue or problem
Cost	The additional expense of implementing an EBT and the cost effectiveness of it.
Feasibility	The extent to which an EBT can be successfully used within an organisation, in a particular setting, or with a certain population
Fidelity/ quality of programme delivery	The degree to which an EBT was implemented as it was designed in its original protocol.
Penetration/access to services	The integration of an EBT within and across a service setting (e.g., across a population)
Sustainability/standard practice of care	The extent to which the EBT is maintained or institutionalised within a setting's ongoing operations

Source: Proctor & Brownson, 2012.

From a global perspective, Tansella and Thornicroft (2009) state that 'if the development of implementation science is in its infancy, then its application to mental health practice may be considered as embryonic'. This is particularly true within LMICs, and even more so in (post) conflict LMICs, where there is limited descriptive literature on DI outcomes, barriers, and/or facilitators, with even fewer rigorous studies examining specific strategies of implementation. Programmatically, dissemination and implementation is becoming more common (e.g., Ventevogel et al., 2011), but these efforts are largely void of rigorous evaluation of their success.

This paper presents DI research in conflict settings as an essential new research direction. The authors utilise advances on some mental health interventions showing evidence through RCTs in such settings, as a starting point. Most of these studies may be considered hybrid studies, in that although the effectiveness of the interventions on reduction of symptoms was the primary outcome, the researchers also monitored other implementation outcomes (e.g., fidelity). Based on the authors' collective experiences with these studies, we seek to outline key implementation challenges and strategies in implementing evidence based interventions in conflict affected LMICs (see Table 2 for list of authors' studies).

Implementation challenges and strategies

Delivering an evidence based intervention within a conflict affected LMIC is rife with challenges, some which are relevant across settings and others that are context specific. Many of the challenges and potential strategies discussed below cut across the time frames of implementation (pre, during and maintenance), as well as the various levels of implementation (policy, organisation and individual).

Lack of properly trained personnel

One of the difficult challenges is the shortage of individuals with professional mental health training (Eaton et al., 2011; Kakuma et al., 2011; Kieling et al., 2011; Saraceno et al., 2007). The comparisons between high income countries (HICs) and LMICs are stark: for example, one general psychiatrist is available in lower resource settings, on average, for a population of 1.7 million (Patel & Thornicroft, 2009; Jacob et al., 2007). Additionally, most LMICs do not have training programmes dedicated to mental health services (WHO, 2011).

This challenge has led to a growing movement advocating the use of non specialists in so-called, task sharing models to provide evidence based psychotherapeutic treatments (Verdeli et al., 2003; Patel et al., 2007; Saxena et al., 2007; Jordans & Tol, 2013; Chatterjee et al., in press). In all studies
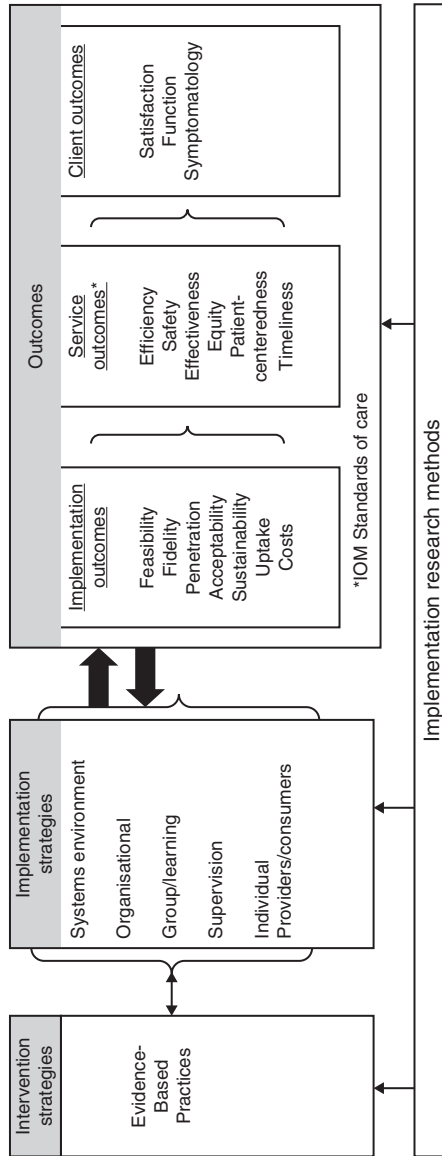
Figure 1: Conceptual model of implementation research.

Table 2 Studies included

Authors, year	Setting	Design	Study conditions and evidence base	Evidence base for treatment	Participants	Providers	Outcomes assessed	Conflict affected description
Bass et al, 2013	DRC, South Kivu; Community based with services provided in rural settings	Randomised controlled trial	1) Group CPT compared with access to individual support	CPT has multiple RCTs from the USA	Adults	Psychosocial assistants employed by NGO. Previous training in case management and supportive counselling	Trauma, depression, functioning anxiety	Sexual violence survivors, exposure to ongoing rebel violence in their villages
Bolton et al., (2014)	Thailand/Burma border; community based services provided	Randomised controlled trial	CETA compared to waiting list control	Other common elements have been tested in the USA but the CETA version for LMIC was first tested in this trial and in Weiss et al.	Adults	Lay community members; no formal training in MH and limited education	Trauma, depression, functioning anxiety	Burmese refuges subject to arrests and deportation
Weiss et al., (submitted)	Southern Iraq; community based integrated into MoH clinics	Parallel randomised controlled trial	1) CETA compared to WLC; 2) CPT compared to WLC	CPT has multiple RCTs from the USA; See above note on CETA	Adults	Community health workers in the MoH system; no previous MH training; educated	Trauma, depression, functioning anxiety	Ongoing bombings, road closures and political events throughout the study
Bolton et al., (submitted)	Northern Iraq community based integrated into MoH clinics	Randomised controlled trial	IPT, BA, and a psychosocial intervention designed by the NGO	IPT and BA have multiple RCTs from the USA; This psychosocial intervention has not been tested	Adults	Community health workers in the MoH system, no previous MH training, educated	Trauma, depression, functioning anxiety	Ongoing community violence throughout or in the period prior to the programme
Jordans et al., 2013	Sri Lanka, Burundi, Indonesia, Sudan, Nepal	Multiple designs (including CRTs; n =1 series)	Classroom based intervention (CBI)	CBI has had multiple trials across multiple countries	Children	Community volunteers; teachers	Multiple	
Bolton et al., 2007	Northern Uganda	Randomised controlled trial	IPT compared to creative play and WLC	IPT has multiple RCTs in the USA	Adolescents	Community members; no formal training in MH and limited education	Trauma, internalising problems, externalising	Internally displaced persons camp; ongoing violence in/around the area
Bonilla-Escobar et al. 2014 (report to USAID)	Buenaventura and Quibdo, Colombia	Randomised controlled trial	1) CETA compared to WLC; 2) Community intervention compared to WLC	Creative play has not been tested; See above on CETA; Community intervention has not previously been tested	Adults	Community members; no formal training in MH and limited education	Trauma, depression, functioning anxiety, anger	Most affected areas by displacement in Colombia, armed strikes during the programme, and unofficial armed conflict for territory.

Interpersonal Psychotherapy (IPT); Behavioral Activation (BA); Common Elements Treatment Approach (CETA); Waiting List Control (WLC); Classroom Based Intervention (CBI); Medical Health (MH); Cognitive Processing Therapy (CPT); randomised controlled trials (RCTs);

highlighted within this paper that were conducted within conflict affected areas (see Table 2), lay workers provided the evidence based interventions. A recent Cochrane review (van Ginneken et al., 2013) identified preliminary evidence for the effectiveness of mental health interventions provided by such non specialists in LMICs, for certain mental health problems. Although this is a currently recommended approach, there is agreement that there is still much to learn about how to do this well, depending on the context (Pérez -Sales et al., 2011). For example, a recent review of a task sharing approach concluded that there is a significant lack of data on the acceptability and feasibility of this model, with many studies not measuring and/or reporting these variables (Padmanathan & De Silva, 2013).

The task sharing model must also adequately address the fact that individuals with limited training need different support than providers with more extensive mental health services training (who themselves need ongoing supervision). A multi-level system apprenticeship model of training and supervision has been used to provide layers of ongoing support and supervision, and ensure fidelity (Murray et al., 2011; Jordans et al., 2012). The apprenticeship model employs support from a variety of providers (direct providers, local supervisors, experts, etc.) and involves a process over time, including initial training, practice among peers, limited clients with close supervision, and eventual (based on skill) graduation to more independent use of the EBT. For example, in the trial in the Democratic Republic of the Congo (Bass et al., 2013), a system was set up with community based service providers who were supervised by Congolese psychosocial supervisors associated with an international NGO. For the trial, the supervisors were provided in-country supervision by a US trained social worker (limited cognitive processing therapy (CPT) specific expertise), who in turn was supported long distance by the US based CPT expert trainers. Three more recent studies have been completed on a common elements treatment approach (CETA), which is a transdiagnostic approach that teaches counsellors certain components and then how to put the components together in particular ways to treat varying symptom presentation (see Murray et al., 2014a for details). In the CETA trials done in Iraq, Colombia and the Thailand/Burma border, local lay counsellors were supervised by local supervisors who had all trained simultaneously. Supervisors had weekly phone calls with US based CETA trainers, for the duration of the study, reviewing each case for fidelity and continually training supervisors, both on treatment components and ordering/sequence.

Attrition of personnel

A related challenge is attrition of lay workers taught to provide evidence based interventions. Most countries or projects have yet to devise a formal job position or title for the individuals now trained to deliver evidence based interventions in non specialist settings. Without a formal 'place' within the health infrastructure, problems arise such as limited future work opportunities and/or individuals not using their skills past a particular project life (Padmanathan & De Silva, 2013). Attrition due to situations like health issues, maternity leave and/or displacement is also common, and requires the ability to constantly retrain a non specialist workforce in evidence based interventions. The relocating of health workers to other areas was also a factor in Iraq and Timor-Leste based on the author's experiences.

One idea yet to be realised is to engage policy makers enough to create a new 'place' within the health care system for those trained in evidence based interventions for mental health. Research is needed to evaluate the added value of dedicated mental health workers (e.g. counsellors) providing EBTs as a new cadre within the health system. This research is currently ongoing in

Nepal, as part of the Programme for Improving Mental Health Care (PRIME, www.prime.uct.ac.za). To deal with loss of counsellors over time, one strategy often suggested is to train locally based individuals in how to train evidence based interventions. A Training of Trainers (ToT) is a specific form of training that seeks to provide would-be trainers with the necessary knowledge and skills to become trainers themselves (International Labour Organisation, 2002; see also USAID, 2008). There is limited research on whether existing ToT efforts or programmes have achieved a desired level of change in capacity of individual trainees (Davis et al., 1999; Steinert et al., 2006). Another strategy to reduce attrition of personnel is to build the capacity of an educational institution, so that there is a formal degree programme related to the ongoing implementation of EBTs in mental health (Thornicroft et al., 2012). For example, institutionalising a new curriculum on effective treatments within the local mainstream educational system. In Nepal, this was tried by developing a one-year, post graduate diploma course in psychosocial counselling (Jordans et al., 2003). In conflict affected settings, the lack of stability or organisation within a government often makes this particularly challenging. In Iraq, authors (LM, PB, GZ, AA), as well as members of the Ministry of Health, have discussed this strategy with local universities and attempted to engage them. University representatives stated challenges such as finances, lack of human resources (professors, trainers) and low priority for mental health education, compared to other academic interests.

Danger and instability

Perhaps more specific to conflict affected regions are dangerous events that occur prohibiting ideal implementation. For example, during the study trial conducted in southern Iraq (Weiss et al., submitted), many of the study sites experienced bombings, political events that prohibited movement and/or increased security check-points. During the study trial conducted in the Democratic Republic of the Congo (Bass et al., 2013), rebel attacks on the study villages were not uncommon, resulting in study participants and treatment providers having to sometimes spend the night in the bush. In Colombia, there were multiple political events that caused an area to be '*shut down*', where individuals were not allowed to travel for a period of time, and occasionally abductions occurred. Events such as these can drastically affect the ability of clients to access services, for counsellors to see clients safely and for supervisors to communicate with counsellors.

Approaches to manage this risk have varied widely depending on the context and extent of danger. In the studies listed in Table 2, the authors worked closely with locally based organisations that had intimate knowledge of the context and already had a wide range of safety procedures in place. These were adopted allowing for mental health programme implementation, despite the danger. Additional strategies have been used with some success. For example, in the Democratic Republic of the Congo, if supervisors could not get to the villages to provide supervision, phone based supervision was instituted. In the study trial completed in southern Iraq, the same solution was used when road blocks were put up prohibiting travel due to bombings and/or violence. During the study trial on the Thailand/Burma border with torture affected Burmese refugees, counsellors saw many of their clients in or around their homes due to the challenges of a refugee moving around in the open. In conflict affected areas, implementation plans that take into account possible disruptions like these are critical.

Lack of facilities

Although integration of mental health within primary health care settings is a recommendation (e.g., Lund et al., 2012),

these efforts are often not accompanied by the resources needed to expand primary care facilities to accommodate more and/or different patients (i.e., those coming for mental health related problems). A severe lack of a private space, particularly locations that are confidential enough for discussing mental health issues, is often a major challenge. This is closely linked to stigma (reviewed below). In addition, health care settings are often not close enough to allow for regular attendance for counselling/therapy sessions. This is particularly challenging in rural settings, such as our study sites in the Democratic Republic of the Congo and a mountainous country like Nepal, where primary health centres are often a day or two walk from villages. Finally, there is often an unmistakable scarcity of facilities that address high risk situations, for example child abuse and neglect, gender based violence or suicidal behaviours.

One approach to the lack of space is for counsellors to meet clients in other locations; spaces that are comfortable, private and more proximal to where the clients live. Some of these may include community centres or religious spaces. In the Democratic Republic of the Congo, group therapy was provided in a small building located in the study participant's village, so they could easily access it for treatment and also see the counsellor outside of sessions if they required additional services. Engagement with clinic directors and the larger Ministries of Health, in some cases, has helped in developing schedules for the limited space. For children, especially, it is deemed important to aim to provide services in a non stigmatising, separate environment, for example, in schools (Jordans et al., 2013).

An approach to the lack of facilities for high risk situations has been to develop creative, setting with specific safety plans that find and/or create local services or organisations that can help with issues like suicide, homicide and abuse (Murray et al., 2014b). On the Thailand/Burma border, a safety plan began with calling supervisors to further assess the risk, and then engage a local doctor who was willing to be 'on call' for high risk cases. The protocol included engagement of multiple staff and resources on the ground to find a solution specific to each individual case (e.g., a personal visit by the doctor, a 24-hour watch set-up, entry to a local shelter for a short period of time). In the event of a safety issue in northern Uganda (within an internally displaced persons camp), research personnel also called a local supervisor who could personally assess an adolescent. Given the long distance to a hospital, if the supervisor was concerned about the youth they would work with the family and others within the camp (e.g., neighbours, camp leaders) to develop an overnight watch, until the supervisor returned the next day to re-assess.

Transportation

Travel to receive services is an issue for mental health programmes across almost all areas of the world, and arguably may even be more problematic in conflict affected areas. In all the studies completed by the Applied Mental Health Group (http://www.jhsph.edu/research/centers-and-institutes/center-for-refugee-and-disaster-response/response_service/amhr/index.ht ml), a significant proportion of the budget had to be dedicated to transport of clients to enable them to access services, for counsellors to be able to serve clients and/or supervisors to consult with counsellors. In terms of DI, this 'logistical' category significantly affects sustainability post project, as it is unlikely governments in LMIC would be able to provide such a service. Literature from the Middle East also cites insufficient local transportation as a major problem (Eapen & Ghubash, 2004).

The option to move services further into the community, and away from primary care settings where services are sparse, has been and should continue to be investigated. In (post) conflict settings, such an approach may have the added benefit of addressing

the damage to the social fabric caused by armed conflict (Scholte et al., 2011). For example, health houses or posts are increasingly cited in policy documents as a potentially closer layer of primary health care services to the population (Ministry of Health (MoH)/Afghanistan, 2005, MoH/Iraq, 2009). In our work, this strategy is helpful in some ways, but still requires transport for supervision in most cases. In the Democratic Republic of the Congo, services were provided closer to consumers in the villages, but still required significant transport resources for supervisors. The Basic Health Services Package for Iraq also utilises this concept, where a rurally located centre has an average of two to three community health workers trained in the provision of basic health services (MoH Iraq, 2009). The strategy to move services into the community is also being implemented in Nepal. In most cases, resources for ongoing supervision would still be needed, unless over time trained supervisors were also positioned in these rural settings or, in some instances, if technology was dependable enough that they could be reached if needed.

Stigma
Lack of knowledge and/or stigma about mental health services has long been identified and documented as a key implementation barrier (e.g., Thornicroft, 2006). Patterns of stigma have been identified across the globe's regions, but specific patterns and their impacts on mental health vary across socio-cultural settings. One example may be when a primary health clinic is 'known' in the community for treating diseases like HIV/AIDS, and thus seems even further stigmatising to those attending the clinic for mental health treatment. We have employed two overlapping strategies. First, to adopt language that is *least* stigmatising within the local setting. This means moving beyond simple translations of mental health terms, instead assessing

through ethno-psychological studies what are the best and most suitable terms to be used (e.g., Kohrt & Hruschka, 2010) and/or conducting qualitative studies to understand local terminology (e.g. Bass et al., 2008). Second, in several of our programmes, psychotherapeutic services are systematically combined with efforts to reduce the levels of stigma among people within the community, as well as among service providers themselves (e.g., trainings, dramas done within community settings). Another strategy is to engage the support from the community at all stages of implementation. For example, in Colombia, the implementing organisation worked with individuals identified as 'community leaders'. These leaders helped the implementation process by facilitating access to remote areas and addressing stigma in the community.
Going beyond this, despite clear evidence that stigma and discrimination are both common and severe worldwide (Lasalvia et al., 2012; Thornicroft et al., 2009), there is at present a clear information gap concerning effective interventions to reduce stigma and discrimination in LMICs at all levels. Developing and testing candidate interventions for stigma is a priority in the coming years and could greatly affect the DI of evidence based interventions.

Lack of leadership
Leadership has the capacity to help or hinder implementation of an innovation and change within a system (Aarons, Sommerfeld, & Wilging, 2011; Damanpour & Schneider, 2006). Identifying leadership in health systems within post conflict settings may be particularly challenging when there is frequent turn-over of personnel and disorganisation of previously established health system hierarchies. This may affect the range of health system actors, from the level of the MoH to remote community health systems. For example, experience by authors from Iraq (AA, GZ) describes how effective

leadership on mental health initiatives was achieved within the MoH, but was quickly challenged due to personnel changes. Similarly, in humanitarian settings, funding priorities may change drastically with frequent changes in personnel of donor organisations, thereby affecting the longer term commitments that recipients of funding can need.

In the process of a programme that aims to integrate mental health into primary health care in post conflict Nepal, some authors have found changes at the policy level are highly challenging with a fragile government system. With no mental health focal point within the MoH, different people function as *de facto* focal points. After considerable investment and headway in explaining the importance of the MoH's role in supporting the process of developing mental health services, the process begins from scratch again when the person is shifted to an entirely different position. With little structure or policy to fall back on, this can happen several times over a couple of years.

Despite the fact that personnel may change, there is still a general agreement that DI efforts need to include engagement of leaders, stakeholders, and policy level personnel. Attempts to expand the reach of these engagement efforts, so that buy-in is *'deeper'* than one person, has been met with mixed success. In cases where government leadership is still in flux, as is often the case in post conflict settings, we are attempting to engage leadership from other (local) organisations that are closely linked and/or respected by the government. In Burma, for instance, there are a number of organisations that are able to influence policy at times and have been helpful advocates for the implementation of certain evidence based interventions.

Lack of trust in the system

Trust in the quality of health services, treatment fidelity, and humane treatment of clients and patients are crucial requirements for the successful implementation of services. Many factors undermine the trust of populations and individuals in health services provided at public health facilities (Gilson, 2003; Whetten et al., 2006). These can include the destruction of the physical infrastructure, limited investment, the politicisation and militarisation of health services, the inequitable distribution of health care resources, unregulated privatisation, and the brain drain of professionals, all factors which are exacerbated in times of conflict (Dewachi et al., 2014). In addition, increasingly vocal media and civil society organisations are exposing medical errors and incidents in some areas, further contributing to the scepticism towards traditionally, patriarchal health service provisions (El-Jardali et al., 2010; World Bank, 2013).

As a concrete example, the Maoist insurgency in Nepal was partially aimed at reducing the unequal distribution of governmental (health) services in urban and rural areas. However, the armed conflict increased this divide (Tol et al., 2010a). As another example, in Iraq, many individuals who are able are leaving countries in the region to receive health care in other countries because they do not trust the existing medical services (e.g., Dewachi et al., 2014). If the community does not trust the overall health system and mental health services are integrated into this broader system, this will become yet another barrier.

Certain strategies have been discussed and/or promoted, but none have been scientifically evaluated in LMICs. For example, there have been calls for engaging general community members and mental health service users in the design, formulation, implementation and evaluation of health policy in general, and mental health services' provision in particular. This type of participatory *'people centred approach'* to the provision of mental health services may include community input into legislation, or the engagement of civil society organisations in building trust and enhancing knowledge of

mental health disorders (Ruggeri & Tansella, 2012). In some LMIC this may include reaching out to traditional healers and treating them as partners, with a goal of agreeing on a delineation of tasks and responsibilities.

Policy

Policy plays a critical role in the dissemination and implementation of services. A fundamental problem underlying the treatment gap is the low priority accorded to mental health issues by most governments in LMICs (Saxena et al., 2007, Bird et al., 2011). In humanitarian settings, a collection of ten case examples in LMICs highlights the important role that policy reform played in ensuring that the initial emergency related mental health services were eventually translated into sustainably, improved mental health care systems (WHO, 2013). Humanitarian settings may in fact create an opportunity to reform or implement existing policies, as there may be a heightened willingness on behalf of policy makers to consider the importance of mental health services.

Some researchers suggest using an argument of advocacy to policy makers, essentially positing that access to mental health services is a fundamental human right (Funk et al., 2006). Others suggest using education to influence policy, stating that there is a significant lack of broad public health perspective among leaders in the mental health community (Saraceno et al., 2007; Jenkins et al., 2010). A recent article outlines an attempt to put such solutions into action (Abdulmalik et al., 2014). The Mental Health Leadership and Advocacy Program was described as a process for individuals in a leadership role in government and civil society with the goal of educating leaders on mental health, and promoting its advancement among policy priorities (Abdulmalik et al., 2014). The authors document success based on outcomes such as planning meetings, advocacy activities (e.g., radio shows), and for some countries, a mental health plan within the government.

Funding

Perhaps most daunting and cross-cutting of challenges in conflict affected LMICs is the shortage of funding to implement, support, and sustain services. According to the WHO, US$60 per capita healthcare spending is necessary to cover basic health needs in LMICs (Gostin, 2012; WHO, 2010b). Mental health care allocations within health care budgets are virtually non existent, with LMICs devoting an average of 1% or less of their health budget on mental health, with this funding often going to psychiatric hospitals in large cities (Saxena et al., 2007). As a result, individuals and families depend on out-of-pocket expenditure with potentially impoverishing effects (Kankeu et al., 2013; WHO, 2010b).

Furthermore, mental health problems themselves represent a significant factor in earning loss for affected individuals and families (Levinson et al., 2010). In (post) conflict settings, these resource limitations often lead to an over reliance on external emergency funds and/or NGOs to provide and finance mental health services. Financing of NGOs can vary widely and tends to fluctuate with changes in funder priorities and political influences. For example, an analysis of funding for mental health and psychosocial support programmes in humanitarian settings found that less than 15% of funding was disbursed through existing medical, social welfare, or primary education systems, thereby raising concerns about the sustainability of funding through shorter term emergency mechanisms (Tol et al., 2011).

Although well known, this challenge has not been well addressed. One strategy the authors have used is to engage the (local) MoH (or other governmental agency) early in post conflict work funded by outside organisations, so they can see the importance, challenges and successes. These efforts may include working to have mental health listed as a priority within a National Strategy Plan, through education around

the effects of mental health problems, for example, on productivity. This has been met with limited success. For researchers and programme evaluation staff, another idea tried is to include cost effectiveness analyses that aid governments and funders in understanding the costs of mental health programming and the associated outputs. There remain many financial challenges in transitioning funding from outside donors to governmental health authorities within the country, even when there is a commitment by the government (WHO, 2013). This is clearly an area where attention is needed to more rigorously evaluate promising models.

Discussion
Looking ahead: a DI research agenda for (post) conflict LMICs
This paper introduced the importance of DI research and laid out some of the primary implementation barriers experienced in the testing of evidence based interventions in post-(conflict) LMICs. Although the studies highlighted within conflict affected areas included creative strategies for addressing these challenges of implementation, there is much work to be done. Rigorous research in the dissemination and implementation of evidence based mental health practices globally remains sparse and is methodologically limited, particularly in post (conflict), lower resourced settings. We advocate that DI research needs to become a priority within LMICs to realise actual implementation of the growing body of interventions that have evidence of effectiveness, with the eventual aim of reducing the treatment gap.

In our opinion, a DI research/evaluation agenda should aim to address at least three key issues. First, more knowledge is required on defining concepts and developing measurement tools for low resource settings. Even in high income settings, these are identified challenges *'at an early stage, leaving the field without clear directions for conceptualising and evaluating [DI] success'* (Proctor & Brownson, 2012; Proctor

et al., 2011). The development of DI measurement tools in LMICs will need to factor in key differences from high income settings, such as a limited specialist work force, diverse organisational structures, no accessibility to ongoing training and weak funding infrastructures. For example, existing DI instruments from higher income settings have items asking about insurance plans or conference attendance that would not be relevant to most low resource contexts (Murray et al., 2013). Assessment tools will be critical in order to advance any dissemination and/or implementation goals.

Second, there should be deliberate examination of implementation outcomes measured before, during and after implementation of evidence based interventions for all programming. This was considered a major research priority in a consensus based, research agenda for mental health and psychosocial support within humanitarian settings (Tol et al., 2011b). There is substantial documented experience to build on, including years of field based mental health programming leading to anecdotal reports and/or case studies (e.g., WHO, 2013; see also an *Intervention* special issue from 2011 [volume 9, issue 3) on integration of mental health into primary health care in emergency contexts – Ventevogel et al., 2011). However, without more rigorous knowledge of DI outcomes across various settings, as well as the synthesis of this data, the effort in identifying effective treatments in LMICs' post conflict settings will not likely translate to actual improvements in accessibility of services for affected populations.

Finally, a critical area of the dissemination and implementation science field that is often neglected is the systematic evaluation of the effectiveness of certain implementation *strategies* through RCTs (Proctor et al., 2009). Specific to LMICs, and even more so in conflict affected areas, part of the challenge is to design and evaluate implementation strategies that both work and are sustainable in such low resource contexts.

For example, although an apprenticeship model has been used in many trials, it requires investments of time, resources and expertise that are difficult to sustain. One direction would be to conduct studies to unpack the critical components and minimal time frames of training and supervision to still produce well trained staff in order to make the best possible use of scarce resources. Certainly, implementation strategies need to be examined to determine how to effectively engage policy makers and governments in mental health integration.

In delivering these three aspects of future DI research, collaborations between universities, governments and implementing organisations will be crucial. Collaborative DI projects between academic, implementing and policy organisations provide ideal contexts for learning to flow both ways. For instance, to academics about which effective programmes have better chances for sustainable implementation, and to implementing and policy organisations about systematic evaluation of implementation. Such collaboration could take the form of adding DI indicators into routine programme monitoring and evaluation and/or becoming a secondary aim in an effectiveness trial. Feedback loops will also be critical in that if a treatment or programme is difficult to scale up, it may be too complex and need to be re-evaluated into a simplified format to aid in dissemination and implementation efforts.

Conclusions

The field of global dissemination and implementation needs to advance significantly to realise any longer term sustainability of implementation of EBTs, leading to a reduction in the treatment gap. Three major directions explored include: 1) definition of DI concepts and development of DI measurements appropriate for low resource settings; 2) evaluation of implementation outcomes within the numerous programmes running in LMICs; and 3) study of implementation strategies (rather than anecdotal, or descriptive case studies).

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