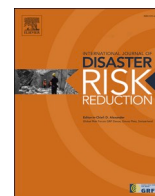


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A proactive approach: Examples for integrating disaster risk reduction and mental health and psychosocial support programming

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ABSTRACT

Natural disasters and humanitarian emergencies exert devastating impacts globally. Among these effects are disruptions in mental health and psychosocial well-being. Traditionally, mental health and psychosocial support (MHPSS) interventions have been implemented in response and recovery phases. Yet, the field of disaster management has demonstrated a shift towards disaster risk reduction (DRR). The degree to which the MHPSS field has followed this trend has been limited by several factors, including a lack of consensus-based guidance for MHPSS and DRR integration. However, examples from the field exist and demonstrate the feasibility of taking proactive approaches to supporting mental health and well-being and building better before emergencies occur. The following article outlines two case examples, one project in Sierra Leone and another in India, integrating MHPSS and DRR approaches and principles. Lessons learned from these cases and specific challenges in each context are highlighted and discussed.

1. Introduction & background

Natural hazards and emergencies have a substantial impact on individuals and communities globally. Natural hazards alone led to 1.35 million deaths and approximately US\$ 2.6 billion in total losses between 1994 and 2013 ([1]. These impacts will only increase as the global climate emergency worsens: by 2050, an estimated 143 million people will be displaced due to climate related risks in just three regions (Latin America, South Asia, & Sub-Saharan Africa; [2]. Additionally, violence and conflict continue to rise, resulting in a ten-fold increase in battle-related deaths between 2005 and 2016 [3] and a global economic impact of US\$ 14.1 trillion measured by purchasing power parity [4]. Meanwhile, 6% of global income, nearly US\$ 500 billion, is lost annually due to epidemic risks [5], a figure certain to skyrocket in the aftermath of the global COVID-19 pandemic. Stated simply, the incredible devastation and loss inflicted by emergencies cannot be overstated.

In reaction to these significant threats to safety, deprivation of livelihood, and material, economic, and social losses, evidence suggests that individuals will develop significant mental health problems or

experience exacerbation of pre-existing conditions. In conflict settings, approximately one in five persons experiences a mental health condition [6]. When left unaddressed, these conditions can significantly impact individual, communal, and societal functioning [7]. However, the majority of individuals affected by emergencies tend to demonstrate remarkable resilience in the face of these events, particularly when they are able to meet basic needs, access social supports and re-establish community networks in a timely manner [8].

Traditionally, mental health and psychosocial support (MHPSS) actions have been focused on the response and recovery phases of emergencies with the aims of reducing suffering and re-establishing functioning of those impacted. Until recently, this approach had been aligned with disaster management models. However, recently this disaster management field has begun to expand beyond reactive approaches to encompassing more proactive disaster risk management (DRM), with the goal of disaster risk reduction (DRR). DRR has been described as the policy objective of DRM and refers to “activities aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and

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therefore to the achievement of sustainable development” [9]. This shift towards DRM has been marked both by formal agreements, such as the Sendai Framework for Disaster Risk Reduction 2015–2030 [10], and widespread adoption in countries globally (e.g., Ref. [11]).

Nonetheless, while psychosocial support is explicitly mentioned in the Sendai Framework for Disaster Risk Reduction and identified among functions in the WHO Health Emergencies and Disaster Risk Management Framework [12], implementation of proactive MHPSS activities have been limited globally. Yet, examples exist in the field that demonstrate the feasibility and value of integrating MHPSS activities with DRM perspectives and approaches. In the realm of health, emergency and disaster risk management takes a holistic approach to reducing hazard risks to health by linking activities focused on preventing health problems and preparing for events that are hazardous to health to activities implemented in response to and in recovery from emergencies, thereby reducing their risk [12]. This same approach can also apply for MHPSS. Therefore, MHPSS actions that are implemented from a DRM perspective may be in some cases unique to preparedness (e.g., simulation exercises that integrate MHPSS considerations and testing of MHPSS response activities) or those that are similar to and link strongly with those implemented in the acute response phase or in recovery from emergencies and other crises (e.g., raising awareness and advocating for MHPSS). However, when these activities are implemented from a DRM perspective, they are done so from the viewpoint of preparing for multiple potential hazards (i.e., prior to emergencies), and with the intention to build the resilience of communities, countries and systems before, during and after emergencies, thereby strengthening the humanitarian and development nexus. Existing examples of such efforts can greatly encourage continued shift towards risk reduction among MHPSS actors and lay the foundation for the development of consensus-based approaches for integrating MHPSS practices with DRM. Yet, in order to further advance the field’s understanding of, and confidence in, integrating MHPSS and DRM practices, more information and evaluation are necessary. Therefore, this article demonstrates the feasibility of the integration of these two fields while extending and reinforcing current knowledge in the area. The current article intends to contribute new learning to the field through case studies that demonstrate MHPSS preparedness and risk reduction activities. Our intentions is that these case studies may de-mystify the notion of integrating MHPSS with DRM by demonstrating that there are many actions, some also commonly implemented during an MHPSS response, that can greatly reduce the risks posed to mental health and psychosocial well-being by hazardous events. We also hope that these cases demonstrate the value of applying these actions proactively, across the phases of prevention, preparedness, response and recovery. The article discusses key case studies from Sierra Leone and India demonstrating a proof of concept. These case studies were chosen because they demonstrate effective measures taken in diverse settings. Major achievements and challenges for each case are discussed and key lessons learned emerging from these experiences are summarized. In considering these case studies, it is hoped that both humanitarian and development actors may further understand the feasibility of integrating MHPSS and DRM approaches while recognizing their own capacity and the capacity of others to do so.

2. Case study methodology

Case examples of initiatives integrating MHPSS actions and DRR principles are outlined in the following section. Potential case studies were identified through a larger mapping exercise initiated by the Inter-Agency Standing Committee Reference Group on Mental Health and Psychosocial Support (IASC MHPSS RG), facilitated by the World Health Organization and lead by the first author in January 2019. As part of this initiative, all respondents were asked to provide project descriptions and operational summaries of any completed, in-progress, or planned initiatives. Given that what may constitute DRM and MHPSS practices has

been ill-defined to date, actors may not have explicitly defined their projects as “DRM” or referred to their projects as MHPSS-DRM integration. Thus, cases were selected if they 1) represented hazard prone regions or countries; 2) had begun in the last 10 years; and 3) involved activities that aimed to promote mental health and psychosocial well-being and resilience for the future while reducing risks that contribute to the development of mental health problems. These projects selected were also not being implemented in active response to a humanitarian emergency or crisis but rather were being implemented as initiatives to better prepare and develop systems that would be more functional in responding to emergencies. This might be through: prevention efforts prior to, and preparedness for, emergencies; reduction of further exposure and suffering during emergencies; and building the mental health system back better following emergencies and in preparation for future events. In both cases, the current case studies selected were also faced with the challenge of an emergency response after the project was implemented, which allowed further evaluation of their relative success and areas for improvement.

Because the purpose of this article was to demonstrate a proof of concept, highly detailed reports regarding the nuances of each case were beyond the scope. However, in an effort to follow standardized approach for collecting case studies, the Centre for Global Mental Health at London School of Hygiene and Tropical Medicine (LSHTM) and CBM’s Case Studies Project methodology [13,14] was followed with adaptations to incorporate and emphasize domains of interest and relevance to DRR (see Table 1). This methodology organizes and integrates information from a variety of sources across 14 domains of interest and has been employed in multiple prior case studies (e.g., Refs. [14–16]). In line with this approach, where possible, data collection ought to include participant observation carried out over a series of field visits with the explicit intention of answering the overarching research questions of “is this programme working? Why or why not?” This approach then allows investigators to develop a narrative description and SWOT (strengths, weaknesses, opportunities and threats) analysis. While field visits with these specific questions in mind were not taken for this project, co-authors J.D. and J.E. were present during the work in Sierra Leone, and co-authors K.S. and J.K. led the work in India. Authors coordinated to provide narrative descriptions of each case and conducted analyses based on the co-authors’ knowledge of quantitative and qualitative information relevant to the 14 domains of the LSHTM-CBM Case Study methodology adapted to emphasize DRR (Table 1). Additional information was also gathered via literature searches and document review as well as discussions with relevant programme staff.

3. Case study descriptions

3.1. India

The Republic of India is large and diverse country in South Asia with a population of nearly 1.4 billion, equivalent to approximately 18% of the world’s total populace. India is frequently affected by multiple hazards and demonstrates a diverse profile of disaster risks across its regions. Common hazards include heavy rainfalls and flooding, cyclones, mudslides, avalanches and earthquakes. Research across Indian communities has demonstrated that prevalence of common mental health problems and psychiatric morbidity are both significantly higher among persons affected by disaster, relative to the general population (e.g., Ref. [17]; [29]). However, mental health care gaps have existed with major deficits in training, limited availability of mental health professionals [18], and partial implementation of mental health reforms and policies [19].

In order to increase the national capacity for psychosocial support during and after emergencies, the “Developing Resilient Cities through Risk Reduction to Disaster and Climate Change” project was initiated in 2017. This DRR-Focused project began as a collaborative effort implemented by the United Nations Development Programme (UNDP) and the

Table 1
Overview of LSHTM-CBM case study methodology domains.

Domains	Relevant Areas	DRR Considerations
Context	Environment in which the programme functions Health system in which the programme functions	<ul style="list-style-type: none"> • What were the disaster risks in this context and in relation to MHPSS? • How was mental health viewed in the area prior to this project?
History	History of Programme	<ul style="list-style-type: none"> • Were there any known efforts at risk reduction prior to this project? • If so, did your project coordinate or link with these?
Programme Model	Programme conceptual framework Engagement with broader systems	<ul style="list-style-type: none"> • What motivated the project organizers to implement this DRR approach? • Did stakeholders involved consider this project to be "DRR?" How so? • Who was involved and how was this similar/different from a response? • Were there challenges in collecting funding, building support etc., for the project?
Programme Organization	Programme resources	How were these challenges overcome?
Client populations	Programme management	How were at-risk groups involved in developing this project?
Interventions	Client characteristics Pathways to care Clinical interventions Medications	How were international norms adapted to the local context? How was capacity-built for interventions?
Information	Psychosocial interventions (including self-help groups and livelihood programmes) Accessibility of services Information systems	<ul style="list-style-type: none"> • Were there efforts to promote access such as stigma reduction, mental health promotion, etc.? • How was preparedness or prevention a part of this project?
		<ul style="list-style-type: none"> • What lessons were learned? Did these impact local policies and practices thereafter? • How was the program evaluated? • Were there indicators related to mental health risk reduction or resilience building? • How was info distributed? • Was the project tested by an emergency after it was implemented?

Note. Table adapted from Ryan et al., [16].

National Institute of Mental Health & Neurosciences (NIMHANS) in India. NIMHANS aspect of the project focuses on mental health psychosocial support (MHPSS) preparedness in India's ongoing DRM efforts across six municipalities (see Fig. 1) and was led by co-authors JK and KS. The effort represents the first large-scale MHPSS preparedness initiative in India.

The process of developing the Indian model of Community Resilience began with a review of the literature and multi-hazard risk and vulnerability analyses in each of the six cities. Thereafter, a needs assessment tool was developed and implemented across each site to assess psychosocial needs in each area in-line with local cultural, linguistic, and social differences. Needs assessment information was collected through key informant interviews (KII) with key stakeholders and field workers, focus group discussions and transect walks in communities to identify risks and also engage stakeholders. Assessments revealed that psychosocial support was not a part of existing disaster management plans. Moreover, results indicated that health professionals were largely not prepared to meet MHPSS needs, education professionals were ill-equipped to handle high-risk behaviors and mental health concerns among adolescents and children, women were in need of greater focus and inclusion in DRM efforts as they were often not included as part of the decision making process, and governmental and NGO stakeholders were in need of greater sensitization to and capacity for building MHPSS preparedness among communities.

Informed by this psychosocial mapping and needs assessment, NIMHANS engaged in considerable advocacy and awareness raising across the departments of government involved in emergency response and management and with at-risk communities to increase support for MHPSS capacity building and risk reduction. NIMHANS actors began this process through a top-down approach, wherein sector heads from various departments of local government were first gathered to discuss the value of MHPSS preparedness and risk reduction. Thereafter, mid-level officers working in the communities were gathered with heads of their departments to further develop collaboration and buy-in while reducing stigma. Finally, community workers, community leaders, and community members, and members of particularly vulnerable groups were gathered to discuss the value of MHPSS preparedness and risk reduction and tailor planning to specific needs in each city. Through these efforts, NIMHANS was able to raise awareness, reduce stigma, and develop partnerships that would later aid in integrating mental health and psychosocial components into existing DRR initiatives at multiple levels of society. Thereafter, NIMHANS and partners developed a suite of tools for scaling up MHPSS preparedness and DRR activities, including a manual on DRR ([30]), which informed the actions taken by NIMHANS and partners during "Developing Resilient Cities through Risk Reduction to Disaster and Climate Change" project described here. The manual included discussion and review of 'psychosocial risk reduction', including common reactions in emergencies; coping, adaptation and resilience; vulnerable groups in the Indian context; cultural factors in MHPSS and DRR; and support and risk reduction for caregivers and first responders. The manual also outlined stepwise processes for integrating psychosocial considerations within Participatory Preparedness Appraisals and Hazard, Risk and Vulnerability Analyses, for engaging and empowering vulnerable groups, and for implementing programmes to prepare an MHPSS response should an emergency occur. To accompany this primary manual, training materials were also developed, including a facilitator's manual on MHPSS considerations in DRR and a participant's workbook intended for general public participants in the project. Additional pamphlets discussing concepts such as understanding disaster and disaster impacts, do's & don'ts in disaster, emotional reactions in disaster, principles of emotional support, children in disaster, women in disaster, special considerations for persons with disability & elderly persons, how to make a referral, tips for stress management and considering marginalized groups in disaster settings were also produced to expand awareness and increase access to appropriate information among communities.

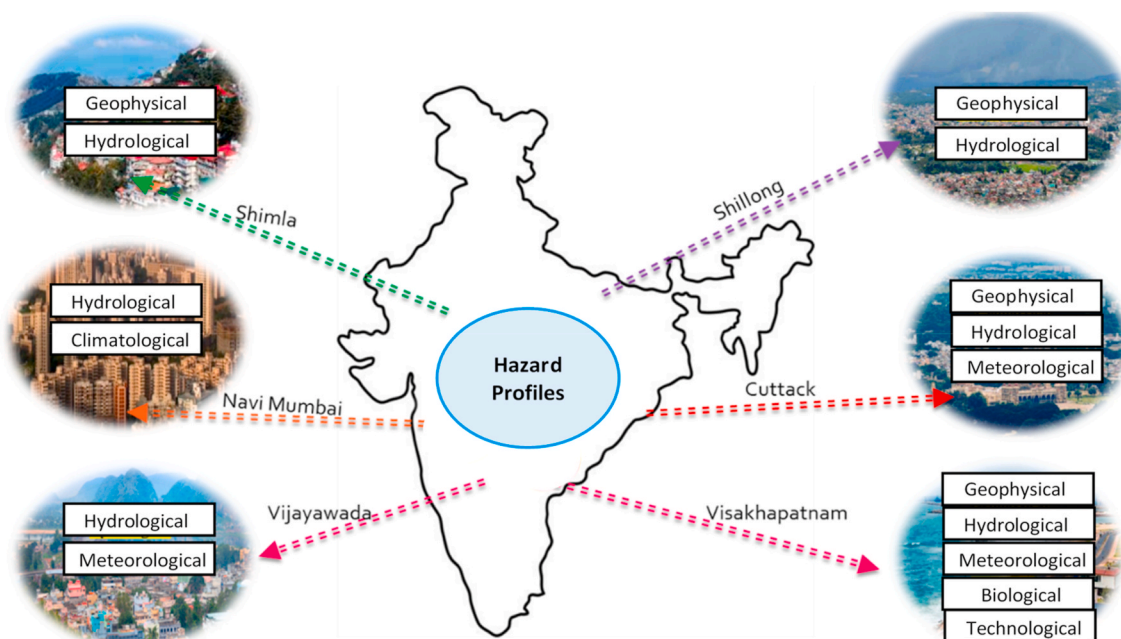


Fig. 1. Multi-hazard profile of six cities.

Following awareness raising and tool development, capacity building became a major focus of the project. In order to build capacity, project actors also developed a three-day training on basic psychosocial support and psychological first aid (PFA; [20], that was integrated with pre-existing DRM-related trainings being implemented through UNDP. A training-of-trainers (ToT) was held involving 20 trainers from each of the six municipalities. Following the ToT, master trainers returned to their cities and began to localize and implement preparedness and capacity building efforts with the support from NIMHANS actors. These trainings targeted multiple layers of municipal administration and community, similar to the initial approach to developing support for MHPSS. In total, approximately 244 stakeholders had been trained by the end of 2019. Monitoring and evaluation results indicated that participants developed increased knowledge of and preparedness for providing MHPSS in each of the six cities. While challenges faced included scarcity of resources, competing priorities, and the need for frequent disaster responses that interrupted preparedness, these trainings continue to be accepted and implemented across the country due in part to the political capital and name-recognition of the NIMHANS institute.

The value of this program has since been demonstrated in response to the COVID-19 pandemic. Many stakeholders involved in conceptualizing the programme continue to provide input in shaping the direction. Those who have been previously trained have responded to increased mental health needs across the six municipalities and beyond. As part of the greater COVID-19 response in India, relief camps were established by the Ministry of Home Affairs to provide food and shelter to many citizens and migrant workers severely impacted by the pandemic and resulting protective measures. Within these camps, previously trained community health workers have been engaged in raising awareness of effective coping strategies, providing basic psychosocial support, and conducting outreach and referral for individuals in need of greater care. These efforts have been conducted and integrated with regular health promotion and education on the importance of social distancing and are supported by governmental departments administering the camps. However, capacity for providing MHPSS in the context of COVID-19 remains an issue in many areas across India, particularly those that were not able to be targeted in this project. Greater attention to and focus on DRR and MHPSS efforts is needed in order to reduce suffering

and promote preparedness throughout the densely populated country.

3.2. Sierra Leone

Sierra Leone is a coastal country of approximately 7.7 million people in sub-Saharan West Africa. The past three decades have seen a series of major emergencies which have resulted in substantial challenges to long-term development. Sierra Leone was overrun first by a brutal civil war between 1991 and 2002 and subsequently by the Ebola Virus Disease epidemic of 2014–2015, both of which have frustrated efforts at economic recovery despite substantial natural resources and some positive economic reforms. In addition, in 2017, mudslides killed over 1,100 people and displaced many more living in poorly built housing on the hills around Freetown. This disaster demonstrated the housing insecurity and poor infrastructure that also exists in many other areas of the country. It also showed how such poor infrastructure can result in unnecessarily high rates of death and injury when hazardous events occur.

Life expectancy remains at 53 years in Sierra Leone, and the Human Development Index (a useful composite of health, education and economic measures) is 0.438. Human Development Indices range from 0 to 1, with scores below 0.550 representing very low human development, while scores above 0.800 represent very high development [31]. Although the current score actually represents progress since the civil war, it remains near the bottom of global rankings at 181/189. This is largely driven by the ongoing post-conflict legacy of high youth unemployment, weak governance, poor health and education infrastructure and widespread poverty.

These issues are also reflected in the mental health system. In 2010, mental health services in Sierra Leone consisted of a single psychiatric hospital in Freetown [21,22], located near the coast and hundreds of kilometers away from many communities. Previous efforts to increase the availability of MHPSS had been undertaken in the country during and shortly after the civil war, but, this work had largely stopped and focused mainly on combatants and child soldiers. However, lessons learned from gaps identified during the response to MHPSS needs during the civil war informed the need for system strengthening and greater awareness of mental health and psychosocial issues. Still, the value of mental health was largely underrecognized prior to the Ebola outbreak.

Very little investment occurred, mental health services were largely non-existent in many districts, and mental health system development efforts were mainly resourced through funding from international actors. Thus, building political support remained an essential need.

In 2010, prior to the Ebola virus outbreak, WHO identified Sierra Leone as a primary country for piloting the Mental Health Gap Action Programme (mhGAP) aimed at strengthening the mental health system through integrating mental health at the primary and general health care level. To implement this programme, CBM international, the Sierra Leone Ministry of Health and Sanitation, and other partners and stakeholders established a strong intersectoral coalition (Mental Health Coalition – Sierra Leone) to address these issues through the “Enabling Access to Mental Health in Sierra Leone” initiative [23]. Still in operation today, the initiative began with the goals of 1) building capacity for mental health service delivery at the district and primary level, 2) developing a national mental health advocacy and peer support network, and 3) developing a national mental health awareness and community engagement programme. Coalition partners ultimately worked to strengthen governance and enhance prioritization of mental health in the country by developing a mental health policy, liaising with a Steering Committee at the Ministry of Health and Sanitation (MOHS), increasing financing and human resources, advocating for decentralized service provision, developing information systems and building this network of experienced and effective advocates and service providers. This coalition was crucial to successfully promoting investment in a sustainable mental health system.

Between 2010 and 2014, a cohort of 21 psychiatric nurses were trained as part of the Enabling Access programme through a course developed at the College of Medicine and Allied Health Sciences. Ongoing supervision was thereafter provided by senior nurses and visiting professionals (through the King’s Sierra Leone Partnership) to further support quality care provision by those trained. In addition, general primary care nurses received basic mental health training at the University of Makeni and thereafter worked in providing integrated care in primary health care settings across the country. Additionally, through the Mental Health Leadership and Advocacy (mhLAP) programme, mental health leaders traveled annually to a short course in mental health leadership and advocacy in Ibadan Nigeria (2009–2019) to further enhance capacity. More recently, training of trainers in the mhGAP-Intervention Guide (mhGAP-IG) [24] and in the QualityRights tool kit [22] were also carried out and resulted in over 60 doctors and 500 Community Health Officers receiving training in a contextualized version of the mhGAP – IG manual and thus enhancing access to needed care for persons with mental health conditions.

In order to ensure approaches to supporting mental health throughout the initiative were inclusive and accepted among the local communities, local traditional healers and religious leaders were engaged to support the initiation of mental health services in districts where they had been largely non-existent. To this end, mental health nurses led Community Mental Health Forums (CMHF), involving formal and informal care providers, religious leaders and traditional healers in order to enable stakeholders to discuss and identify locally and contextually relevant approaches to promoting mental health while reducing or preventing local practices that may be harmful, abuse rights or lead to other negative outcomes. The intention was to develop a shared understanding of mental health and how to build a more functional mental health system. The content of these CMHF was determined through multiple participatory workshops where stakeholders discussed local myths regarding mental health, local idioms of distress and understanding regarding mental health care, and barriers in the health system that would pose challenges. In doing so, nurse facilitators were able to also form collaborative relationships by connecting with traditional healers and community leaders, thus establishing a more functional system. Ultimately, these inclusive approaches served as an important tool for addressing many of the challenges identified, providing accurate mental health information, dispelling myths and

stereotypes, and reducing stigma within communities. Additionally, the process was centrally important to deriving a locally contextualized model for providing mental health care (for further discussion of the approach, please see Ref. [25]).

The value of these mental health services built through the Enabling Access to Mental Health programme was clearly demonstrated during the Ebola crisis in Sierra Leone. Initially, there was a risk that the MHPSS response would be poorly coordinated, as it fell ‘between clusters.’ However, a cross-sectoral MHPSS Working Group was established based in-part on pre-existing coalition partnerships and proved an important means of coordination. Additionally, the fact that several clinicians trained by the project were already in place when the Ebola outbreak occurred meant that they could be utilized to support wider efforts to meet the MHPSS needs across the country. These providers proved to be an essential complement to the field-based psychosocial support activities delivered widely by the many actors who arrived to respond to the Ebola crisis. Front-line health, social, education and other staff trained in psychological first aid provided basic support to many affected communities and also identified individuals with needs for higher levels of support. The people identified were therefore able to benefit from local access to the next level of health care established through the prior capacity building efforts. Without this, the full range of recommended interventions in a balanced approach to MHPSS, as recommended in the Inter-Agency Standing Committee (IASC) Guidelines on MHPSS in Emergency Settings [8], would not have been available. The psychiatric nurses and other clinicians trained played an essential role, not only seeing the many patients referred by front line workers, but also in supporting Ebola Treatment Centers and survivors’ clinics, providing services for children orphaned by the epidemic, and supporting health and other staff who themselves experienced high levels of distress. These services were an essential element of the provision of care, which was only possible because they were set up *in advance*.

In addition, coalition partners worked with local organizations of people with disabilities during the crisis to ensure that key public health messages, such as actions to prevent the spread of the outbreak or to ensure healthy coping while taking these actions, were made available in accessible formats, that barriers to accessing response services were addressed, and that people with disabilities participated in planning and coordination, so that their needs and priorities were heard and risks greatly reduced. Though not immediately evident before the crisis, the impact of these risk reduction and preparedness efforts on individual and community resilience was clearly demonstrated during and after the Ebola outbreak. Furthermore, the value of investing in and strengthening mental health systems was recognized and became greatly prioritized. For instance, nurses who were quickly deployed received proper payment, an issue that had been ignored for years prior.

Unfortunately, following the shift from the crisis response phase in mid-2016 to more recovery focused activities, the resources, prioritization of MHPSS, and ongoing support for people trained quickly receded. Maintaining the proper support for mental health services and support systems outside of emergencies, and finding means of sustaining investment, remain an essential need for both routine care and support during future crises in Sierra Leone. Nonetheless, recent disaster responses have relied heavily on the mental health infrastructure put in place by the programme. For instance, these previous efforts have led to better preparedness for and response to the COVID-19 virus outbreak, which has utilized many of the same coordination mechanisms put in place by this project. Mental health nurses previously trained by the project are now being deployed to quarantine places (hotels and approved residences) and are working side by side with other responders, such as contact tracers and health promotion teams. In partnership with the coalition, training for social workers and community actors have also been planned in order to increase capacity for the provision of an evidence-informed model of PFA [20] and reinforce previously established referral pathways in the context of COVID-19.

4. Lessons learned

These lessons are derived from the case studies above. An additional source of information was a review of the MHPSS response that was carried out by WHO after the Sierra Leone Ebola crisis subsided, drawing on the experience of local and international actors in the crisis ([28]).

4.1. Community acceptance and ownership are essential for successful and sustainable programming

As is the case with any approach to emergency and disaster preparation, response and recovery, case study actors asserted that communities must not be identified simply as the target of activities. Instead, trusted local persons must be engaged as leaders to build trust, motivate behaviour change and ensure community ownership of and acceptance for strategies. Such was clearly the case demonstrated through CMHF processes implemented in Sierra Leone and in initial planning procedures across the six cities in India. Community engagement is essential in integrating MHPSS with risk management approaches and will lead not only to more thorough implementation but also to increased sustainability. As identified in Sierra Leone through the process of understanding local myths and perceptions of mental health that may contribute to increase mental health risk (e.g., stigma, lack of understanding of mental health), it is clear that communities must play a key role in identifying risks and developing reduction strategies. It is only in this way that acceptance and uptake of MHPSS messages and services will occur and inaccurate and harmful perceptions can be combated.

4.2. DRR strategies and plans must include vulnerable and at-risk voices

Inclusion was a focus generally within both case studies. Community-based partners, such as organizations for persons with disabilities and other advocacy groups, can provide valuable insight into the specific risks faced by the most vulnerable groups and strategies for reducing these risks and preventing harm. In the case of Sierra Leone, these partners were crucial to ensuring risk communications about reducing the spread of the outbreak were made accessibly and could reach vulnerable groups. Meanwhile, in India, women were specifically identified as largely excluded in many local previous risk reduction approaches, and their subsequent inclusion as decision makers was key to ensuring that strategies that were implemented to address MHPSS risks were comprehensive. Such an approach of meaningful participation will ensure that trust is built, that interventions developed are appropriate and impactful, and that communication is relevant and accessible.

4.3. Multi-sectoral and varied stakeholder collaboration, such as between MHPSS actors, DRM actors, governmental, and local at-risk individuals and communities is necessary

Effective MHPSS responses cannot be implemented by any one organization or within any one sector and must be coordinated across relevant stakeholders [8]. Cases also demonstrated that these lessons are applicable to MHPSS-DRM projects, which must include community-based stakeholders, governmental actors, and preferably professionals with experience or expertise in the MHPSS and DRM fields. Some aspects of projects were led by experts designated as DRM focal points within their respective organizations and coordinated with relevant government officials and community leaders, such as in the case of India, where projects were co-led by mental health professionals and colleagues working in previously initiated DRM projects. Others were implemented by individuals with interests or backgrounds in preparedness but little to know prior expertise in DRM, such as the case of Sierra Leone project, where DRM was less of explicit focus but where DRR was an identifiable outcome nonetheless. In any case, both projects required strong collaboration to be effectively implemented.

4.4. MHPSS-related DRM policies and plans should be clear, brief, and realistic and should be integrated with pre-existing structures and initiatives

Case study actors identified the importance of creating plans and procedures that were clear, brief, and realistic in order to ensure available resources for implementation. This was clear in the case of Sierra Leone, where resources were extremely limited and where planning to implement programmes required practical and realistic plans that did not require the presence of many specialist care providers, hence the usefulness of cost-effective initiatives such as mhGAP. In the case of India, actors also demonstrated the value of integrating such plans with pre-existing DRM or governmental efforts to ensure MHPSS-DRM efforts also do not become stand-alone or siloed. This is an essential effort during response and recovery efforts that must also be maintained during prevention and preparedness.

4.5. Advocacy for funding and support should take place at multiple levels prior to emergencies

Prior history of hazardous events may inspire DRM projects. However, obtaining funding and support for MHPSS preparedness efforts prior to future emergencies may be difficult. Yet, these actors demonstrated that such support was feasible, representing a shift in thinking that must take place in order to strengthen MHPSS and reduce risks prior to emergencies. Such prior investment makes an enormous difference in ability to respond effectively and represents a very good return on investment. While detailed return on investment analyses have not been completed to this point for either project, responding to the COVID-19 pandemic has demonstrated some level of sustainability in both cases that can speak to cost-effectiveness. In both cases, fewer resources may be required to mount the MHPSS response to the pandemic because previous efforts have been made to build the capacity. Moreover, in effort to reduce risks, stigma and other factors that have may impact mental health outcomes during the pandemic emergency in both countries have been at least addressed in-part thanks to these initiatives. Such would not be possible without significant advocacy for a change in thinking from seeing MHPSS as solely a response and recovery activity to seeing it as an all-phase component of DRM.

4.6. Name recognition and prior working relationships can be crucial to creating buy-in

The recognition of reputable national institutions as key partners can be crucial for developing local motivation and collaborations to ensure uptake. Prior working relationships and respect for these institutions and their missions may be key to realizing implementation and obtaining support. In the case of India, NIMHANS can be identified as a leader in MHPSS responses nationally. This name recognition was easily leveraged to develop partnerships to support the integration of MHPSS in DRM projects in the country. In Sierra Leone, the convening power of CBM, WHO, and the Sierra Leone Ministry of Health and Sanitation was key to ensuring widespread collaboration and developing working relationships prior to the emergency.

4.7. Investing in health and information systems, capacity, and preparedness prior to emergencies is essential for reducing risks and strengthening response and recovery efforts

Both cases demonstrated clearly and simply the value of preparedness and early investment before emergencies happen. Capacity building and system-strengthening was key to ensuring services were in place when emergencies occurred and have been crucial to combating the unforeseen but devastating impacts of the COVID-19 pandemic. These efforts dramatically improved response and could be linked to greater resilience in recovery phases. Investing in health system strengthening

in advance of an emergency is much more efficient and effective if carried out prior to an emergency, where there are many restrictions and time constraints to building capacity or promoting systems reform.

4.8. Easily accessible and dispersible materials can be effective for raising awareness and increasing preparedness

Communication of necessary information may be difficult in low-income countries and areas where infrastructure may be limited. Easily accessible and dispersible materials can be utilized in these situations as mechanisms for distributing information about preparedness, healthy coping, early warnings, and evacuation procedures. These avenues proved essential for creating effective and efficient communication. In creating such materials, it is essential that care is taken to have a good cultural and contextual understanding, and that they are accessible for people who are illiterate, have sensory impairments, or are difficult to reach (for example in rural areas). People with severe physical, psychosocial or intellectual disabilities might be particularly unlikely to access messages if barriers are not considered. Such was the case demonstrated in Sierra Leone, where community-based organizations were engaged as essential partners to ensuring that public health messaging was accessible.

5. Discussion

The cases described above demonstrated the utility of implementing risk reduction approaches in order to improve mental health and psychosocial well-being and reduce risks to the same. These studies also demonstrated how MHPSS actions can be viewed as more than solely recovery activities, as listed in Priority Four of the Sendai Framework for Disaster Risk Reduction 2015–2030, to activities that can be implemented to prevent or reduce mental health risks, while also supporting preparation for better response and recovery to emergencies. Despite the relative novelty of this approach in the MHPSS field and the challenges discussed, both cases demonstrate the integration and implementation of MHPSS and DRR principles and DRM approaches. Although these cases represented contexts with their own unique socio-cultural environments and hazard profiles, we found substantial commonalities across the sites, and the lessons learned identified collectively remain relevant for many contexts.

Additionally, these cases demonstrate the feasibility of integrating the MHPSS and DRR fields and mainstreaming this integration. Many of the organizations involved in these cases are active in multiple settings and countries globally. Therefore, potential avenues for increased development and innovation in the implementation of MHPSS-DRM strategies and projects exist and may be facilitated internally among actors and externally through formalized mechanisms for increasing attention to this integration.¹

The value of such approaches has also been demonstrated in the context of the COVID-19 pandemic. Now more than ever the world is faced with the challenge of meeting the mental health needs of large

¹ MHPSS.net, a global platform for connecting agencies and organizations and housing resources focused in the area of MHPSS in emergency settings, includes a forum for discussing MHPSS and DRR concepts ("MHPSS.net: Disaster Risk Reduction"). Moreover, the Inter-Agency Standing Committee Reference Group on MHPSS in Emergency Settings (IASC MHPSS RG), a unique collaboration between non-governmental organizations (NGOs), United Nations and international agencies with the mandate of developing and disseminating guidance on MHPSS and providing country-level support, has developed a forthcoming guidance document and tool for integrating MHPSS and DRR programming. The IASC MHPSS RG's *Technical Note Linking Mental Health and Psychosocial Support and Disaster Risk Reduction: Practical Tools, Approaches and Case studies* aims provide guidance on and practical tools for incorporating MHPSS considerations in DRR and vice versa. This tool was developed through widespread consultation and collaboration from experts in both fields.

populations affected by an unprecedented emergency [26]. In the face of this challenge, it is crucial that we as a global society recognize the value of mental health and psychosocial well-being and enhance its priority in the global health, humanitarian and development agendas. By expanding the emphasis of preparing MHPSS services and reducing global risks, both those who are affected by emergencies and those who respond are more likely to demonstrate resilience, engage actively in preparedness, response, and recovery, and work to re-establish societal functioning.

5.1. Limitations

Despite the powerful messages in these cases, limitations in the collection and analysis of the information reviewed above must be noted. First, many agencies participated in the mapping exercise referenced earlier and provided in-depth information for developing case studies of their work to link MHPSS and DRM concepts. Discussion of each of these projects was beyond the scope of this article. Therefore, several other relevant case examples exist which may or may not come to the same conclusions, though a recent review of literature and mapping exercise materials indicated the potential commonality of the themes discussed herein [27]. Conversely, many organizations who may be active in linking MHPSS and DRM either did not provide responses during the mapping exercise discussed previously or relied on reporting from regional and local focal points who may have been overburdened or time-limited and thus unable to fully participate. As a result, many other relevant cases and lessons learned may exist and apply here that were not collected. Second, the purpose of this review was not to provide complete analysis of each project, and so discussing and reviewing these cases was not completely exhaustive. As a result, the current case descriptions must be noted as reviews of each project rather than intensive analyses. Therefore, the material in this review relevant to those agencies may not represent the entirety of their work. Additionally, the devastating COVID-19 pandemic presented a unique opportunity to evaluate further the impact, sustainability, and cost-effectiveness of these projects. However, such an analysis was not feasible in either case due to the complex and ongoing nature of the pandemic at the time of this article's writing. Therefore, future studies would benefit from generating in-depth analysis and discussion of the impact of these initiatives during and after the response to and recovery from COVID-19. Third, the cases studies in this review represented diverse regions globally. However, many areas and regions were not discussed through those projects selected. Therefore, the generalizability of these cases must be considered within the context in which they occurred. Fourth, while case studies described herein detail important considerations and actions for integrating MHPSS and DRM, many issues that are commonly overlooked in MHPSS humanitarian response field were also not completely addressed in these efforts either. Specifically, efforts to address social determinants of mental health and reduce the antecedents of mental health problems are of central importance to MHPSS-DRM and must be further defined and prioritized in order for risks to mental health and well-being to be adequately reduced.

6. Conclusions

Despite these limitations, the review outlines a number of key practices of DRM and MHPSS integration and identifies realistic examples for future projects and focus in the field. These cases demonstrate that, despite the barriers to obtaining support and funding and the relative lack of priority given to mental health needs in many settings, it is possible to implement projects focusing on DRM to meet and reduce the mental health risks posed by emergencies.

There is increasing recognition and consensus that when persons and communities affected by emergencies are supported and their mental health and well-being is promoted through risk reduction and management, they are more likely to demonstrate resilience, engage actively in prevention, preparedness, response, and recovery, and work to re-

establish societal functioning during and after emergencies. The value of these proactive approaches has become even clearer in the context of the global COVID-19 pandemic and in response to the increasing mental health needs that have resulted. However, this unprecedented emergency has also demonstrated many clear and stark gaps in ability to meet the need for MHPSS services globally. Thus, there is a clear and significant need for further integration of MHPSS and DRM practices in order to reduce risks of problematic mental health and psychosocial outcomes and to increase resilience to hazardous events now and in the future. Fortunately, in addition to these case studies, several tools and manuals exist [27] that may support this integration. Moreover, consensus-based guidance and actions established in the forthcoming Inter-Agency Standing Committee “*Technical Note Linking Mental Health and Psychosocial Support and Disaster Risk Reduction: Practical Tools, Approaches and Case studies*” will further promote comprehensive and inclusive risk reduction. WHO, CBM, NIMHANS and other leading organizations have championed the goal of the Building Back Better (BBB) approach in order to build mental health systems and promote well-being. These case studies and forthcoming framework expand upon this BBB approach by emphasizing the value of also Building Better Before emergencies happen, through inclusion of MHPSS in prevention and preparedness. Risk reduction is an opportunity to greatly strengthen mental health and psychosocial resilience. The time to prepare for the events of the future and comprehensively reduce individual and collective risks is now.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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