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PERSPECTIVE

Mass catastrophe and disaster psychiatry

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This paper discusses the vital role of disaster psychiatry in the evolving structures for preparedness and response in the fields of disaster management. The authors address the role of science and experience in addressing the tragedies of mass catastrophe, the need for systems and the challenges of integrating mental health contributions into the practical requirements for survival, aid, emergency management and ultimately recovery. The human face of disaster and the understanding of human strengths and resilience alongside the protection of, and care for, those suffering profound trauma and grief are central issues.
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Disasters challenge every aspect of human adaptation at population and societal levels, and at the level of the individual and family life, across all cultures and countries. They call forth strength, cohesiveness and courageous altruism for the good of others, the group, and savage destructiveness in the fight for competitive advantage for survival through the emergency threat and over time. The current interest in resilience and post-traumatic growth reflects the former; few except the media take interest in the latter. Death, injury and destruction that are inherent in mass catastrophe add to the suffering that may exist through socio-economic disadvantage, development needs and pre-existing conflict, and lead to complex emergencies.[1] There is the potential for a range of outcome trajectories that may encompass more positive, hopeful futures, or further societal damage and disintegration. And regardless of the broader population picture, research has clearly shown that suffering and effect on mental health and wellbeing of individuals and communities may be prolonged.

In a globally 'connected' world, the recognition of the horrific nature of mass catastrophe is 'instant' through the images depicting the human experience of suffering, death and loss, triggering compassion, grief, distress and even psychological injury for some, especially children, and others who may be vulnerable. These and subsequent media interpretations are powerful aspects of disaster mental health, both as vehicles of communication for assistance and support, and as societal interpretations influencing further experience and meaning-making.

Disaster psychiatry is challenged in specific ways. First, there is the need to encompass population aspects of mental health as well as individual experience: the relevance for preparedness and response of both public health and clinically focused strategies, and the spectrum of population distress alongside diagnostic foci.

Second, there is the critical requirement for developing systems of disaster preparedness and response: the various roles, responsibilities and governance of these. Such systems involve disaster mental health capacity and capability built into mental health-care systems, both public and private sector, and the consultation to and supplementation of these by focused disaster psychiatry expertise and leadership. The capacity for surge and sustainability is also important, as is the need for collaboration and coordination with other systems such as those of emergency response and recovery, and the integration with health response from the acute stage through hospital, primary and community care.

Third, there is the engagement with the multiplicity of stakeholders who contribute to mental health at international and local levels, including the United Nations, UNICEF, World Health Organisation (WHO), the World Psychiatric Association and the World Federation for Mental Health. There is likely to be extensive response and intervention offered by multiple professions with mental health goals more broadly: psychiatry, psychology, social work, nursing, public health and the others. There is the vital role of non-government organisations such as Red Cross and Red Crescent societies and many others.

Further challenges exist in the diversity of evidence about what is effective in terms of potential roles and interventions. There is need for a coordinated research agenda using core standard measures, relevant for the

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disaster context; epidemiological approaches; community involvement; pre- and post-disaster comparisons, intervention trials and evaluation at population, group and individual levels over time. Ethically relevant research methodologies and protocols exist but any research proposed should be of value to affected communities, and sensitive to the timing, survival priorities and 'first not to harm'.[2,3] National and international consensus could assist the development of brief core measures meeting high standards of science and relevance for communities and for advancing the field. Such research can also link to needs assessment and surveillance in the early aftermath and subsequently. It is important that any such proposals encompass recognition of the diverse needs in different settings, including in primary care in which local leadership may be central to needs assessment and inform the range of potential intervention programs, as after the Wenchuan earthquake.

There is the need to consider the multiple ways in which mass adversities and the 'trauma' of events, such as disasters, terrorism, conflict, torture and so on, can be understood, especially in culturally diverse settings. There is a range of interpretations such as the effects on sense of safety, attachment, identity and role, meaning and justice.[4] Although trauma syndromes such as PTSD (post-traumatic stress disorder) are established, there is the need to encompass the wider fields of mental and physical health effects: the spectrum of reactions and symptom phenomena; of pathological effects including behavioural responses, as well as disorders; and of co-occurring salutogenic and resilient trajectories.

There is an internationally accepted All-Hazard approach to disasters, which involves strategies for Prevention, Preparedness, Response and Recovery (PPRR). All hazards include natural disasters, those associated with technological failure or 'human-caused', severe human disease threats, such as pandemics, and terrorism. The last may have greater adverse mental health consequences, including changes in societal expectations and systems, potentially through the effect of malevolent intent and the generation of environments of fear.[5] There is a familiarity with natural disasters and particularly seasonal floods, fires, hurricanes and so on. Mass catastrophes such as the South-east Asian tsunami, the Kashmir/Pakistan earthquake, Hurricane Katrina, Cyclone Nargis in Burma, the Wenchuan earthquake in China and, most recently, the Haitian earthquake, have created the greatest challenges for response by the extent of death, injury, destruction and population dislocation that they have produced.

Key issues include the role of psychiatry and the range of mental health professions in offering their contributions to protecting and promoting the mental health and wellbeing of the populations they serve in the face of such adversities, while at the same time assessing and intervening to lessen the mental health problems that may arise or continue. This can be considered across a number of priority themes that are as follows.

Prevention and preparedness

Negotiating a significant role in these strategic domains requires the development of psychiatric and broader mental heath initiatives such as those that can assist with:

- *Preparedness planning* for mental health through identifying potential rationale, objectives, planning and education and training of mental health workforce, and with testing in disaster exercises. Ursano *et al.*'s 'Textbook of Disaster Psychiatry'[6] as well as numerous manuals contribute. WHO has provided guidelines for such preparedness plans (WHO AIMS-E, http://www.who.or.jp/2005/mentalhealth.html and the IASC (Inter-Agency Standing Committee) guidelines for response, http://www.interaction.org/article/iasc-guidelines-mental-health-and-psychosocial-support-emergency-settings).
- *Capacity building* is relevant in terms of the capacity of psychiatric and mental health systems to respond to the demands of emergencies; the acuity, the requirements of surge and sustainability, consultation-liaison approaches to addressing psychological as well as physical injury. At clinical levels the challenge is to better assess and address the effects of adversities such as psychological trauma, loss and grief, dislocation and disruption, which are pervasive for affected populations.
- *Community and Population engagement* with good will that serves a number of purposes such as:

i Resilience building, for instance, through enhancing social capital, requires engagement with diverse systems, organisations and communities. This can enhance their capacity for disaster prevention, preparedness, response and recovery across a range of hazards including, for instance, pandemic, chemical, biological, radiological, nuclear and even cyberterrorism, earthquake and so on, as well as 'everyday' adversities.

ii Recognizing the importance of human relationships is critical, as exemplified by the powerful nature of affectional bonds in survival, the significance of grief with their loss and the intense affiliative behaviours that enhance response in the emergency, early aftermath and beyond. The attachments to family, loved ones, and especially children are at the core of every aspect of prevention, preparedness, response and recovery.

iii Identifying the vulnerable who may need additional resources and protection; for instance, children, those with pre-existing physical and mental illnesses and disabilities, those previously traumatized such as refugees, and minority and indigenous populations.

Children's needs

The importance of preparedness in protecting the lives, health and mental health, wellbeing and development of children is critical and has been encompassed in a wide range of disaster programs and studies.[7]

One of the most important initiatives in preparedness for children was the development of a framework 'Protecting Children in Disaster' developed in China, shortly before the Wenchuan Earthquake.[8] This resource provided key principles of guidance and was thus rapidly available for extensive dissemination to inform response and to help in protecting millions of children affected by this tragedy.

Communication is central to PPRR. It needs to be informed by in-depth understanding of the complexity of individual and societal comprehension of messages, their intended purpose and an 'audience's' behavioural response. There is also the need to take into account 'vehicle', language, literacy, access and penetration, as well as the capacity to act. Trusted sources are critical to this, yet diversity of information, communication platforms and 'experts' may add to confusion, uncertainty and fear. Preparing leaders and sources to understand and communicate messages of risk, actions to be taken for survival and safety, as well as compassionate validation of people's experience, and courage, are key elements. Media also provide a voice, for the affected, their testimony and narrative, and for the disenfranchised as well as the entitled.

Psychiatric consultancy can assist with these issues and can support leadership in development of communication strategies and two-way interactive processes, for preparedness, warning, acute response and the longer-term aftermath.

Hope, positive expectations as well as compassionate leadership and support, for instance, from government and others, are critical themes. The 'Hope' initiative was prominent in the 'Hope' volunteer response immediately after the Wenchuan earthquake. Psychiatrists, medical doctors, psychologists and multiple others wore the 'Hope' t-shirt in the intensive volunteer outreach program that carried this theme in their interactions across the whole response. A similar message is informing the response in Haiti. Research after disaster has shown that the capacity for hope, the generation of hope, may be one of the strongest predictors of better mental health outcomes. Hope communicates positively, although there may at the same time intense distress, grief, suffering and disorders. Hope is future-oriented, supporting the conceptualization of resilience as the capacity to 'bounce forward',[9] rather than 'bounce back'.

Response through the emergency and aftermath

Survival in the face of threat to life, the deaths of loved ones, the mass and gruesome deaths of others, separation, losses, injuries, destruction, disruption of systems of daily living, sustenance and security, ongoing or recurring threat, dread, uncertainty and terror, all contribute at physiological and psychosocial levels as potential stressors. Disaster psychiatry research has increasingly contributed through population and clinical studies to the measurement and monitoring of the immediate and longer-term mental health effects.[10] Effective response in the emergency recognizes the priority for survival and safety, for shelter, security, support and sustenance, and for the triage and treatment of the injured. Disaster psychiatry also has responsibilities in terms of being 'there' at the emergency as is appropriate, at the front line so as to 'know' how it was, to inform planning for the response, but at leadership levels, to support the priorities of physical survival and health protection. There is the need for psychiatric consultancy to support leaders and emergency responders, those acutely distressed, dissociated or requiring acute triage, to mobilize and plan for outreach and follow-up.

Psychological First Aid is the broad approach to deal with the distress of affected populations, alongside practical assistance, information and self-help guidance, call centres and outreach. Early intervention is also a strong focus, for example, after mass violence (www.nimh.nih.gov/health/publications/massviolence.pdf). The value of disaster psychiatry is being there from the earliest stage, of 'knowing' something, of what it was like for those affected and for the emergency workers, of the horror, grief, helplessness, fear and dread, and of the responsive humanity of us all. This is reflected in the experiences of both authors but more particularly of Ma Hong and her colleagues who have worked at the 'front lines' of a number of mass and other disasters in China. This 'knowledge' and experience help to shape system response and inform management of future adversities.

Disaster psychiatry can support leaders and workers, diagnose and manage when needed and prevent additional stressor exposures where possible (for example, exposure to mass deceased remains). It can inform communication strategies in ongoing ways relevant to the specific hazard. Reinforcing key messages of validation, hope, positive expectations, strong compassionate leadership, actions for rescue, support and resources for survival and recovery, are important ongoing elements.

Needs assessment for mental health

This commences with the emergency, firstly at population levels with numbers of deaths, needs of families and other bereaved in terms of missing or dead loved ones, children affected, injuries at physical or psychological levels, destruction of homes and dislocation, damage to infrastructure, institutions such as schools, workplaces and other resources, over time and so forth. These data indicate potential

stressor exposures such as life threat, injury and loss, for example, dislocation and so on, possible outreach needs in terms of access to mental health and other support, and the needs of more vulnerable groups.

More individual clinical components of needs assessment may be built into primary care or hospital-based services, in partnership with specialty mental health programs and systems, and in relationship with NGOs. The IASC (WHO, http://www.interaction.org/article/iasc-guidelines-mental-health-and-psychosocial-support-emergency-settings) has provided excellent broad guidelines that can inform planning through the emergency and into the recovery period, across cultures, developing populations, other groups and across the age-specific sectors. Mental health programs may be implemented at multiple levels, from basic to intensive specialist levels. This allows intervention at population levels, as well as more intensive interventions for those severely affected in disaster and where resources are available. Systems are critical to informed and effective programs tailored from the emergency to the aftermath, with the essential goals of promoting resilience, and at the same time protecting and treating those severely affected, with priority for those with greatest need and highest risk, and for the most vulnerable, particularly children.

Community response and evolving recovery

Critical to the transition from the emergency to the aftermath is the continuity of knowledge, planning and transition into systems for action. First and foremost is the recognition that practical actions to deal with the emergency and its consequences occur spontaneously in most communities. Members of the community are themselves usually first responders, and their strengths and resilience will be the strongest aspects of their recovery, provided they are recognised, supported and provided with the tangible resources needed, such as food, clean water, shelter, warmth and tools for communication and action. Local leadership has a vital part and may become a focus in facilitating the roles of others to assist where need is greater. Capacity for action is one of the central aspects of both physical and psychological recovery, but there is the need for further research to explore how it is effective and what resources and psychosocial support will best facilitate this in the aftermath.

Evidence reviewed suggests that five themes should inform the transition and response from the emergency through the aftermath and subsequently, promoting: safety, calming, connectedness, sense of efficacy and hope.[11]

'Recovery'

This has been the traditional context for disaster psychiatry in terms of assessing and responding at clinical levels to mental health need with a focus on trauma syndromes, such as PTSD, for the most part, but also the wide range of psychiatric, behavioural and societal outcomes that may arise. Population-level intervention strategies recognize the need for public health response to mass emergencies. These include information, self-help, internet/web-based interventions, outreach and so forth. The building of intervention strategies through community institutions such as schools has shown benefit. There have been programmes for emergency workers and other work groups, as well as through workplaces, although the effectiveness of these needs further research. More integrated research protocols and endeavours, greater consistency and better use of 'lessons learned', of the findings of formal evaluations that have occurred can help to build necessary knowledge for mental health-focused recovery strategies at relevant levels. Meta-analyses, such as those of Norris,[12] have been very helpful.

Most of what is current clinical practice builds on evidence from non-disaster settings and hence may have limitations for its translation, as reviewed after 9/11.[13] Excellent guidelines have been developed, informed by the best available research: for instance, Psychological First Aid (http://www.ncptsd.va.gov/pfa/PFA_9_6_05_Final.pdf) and others such as Skills for Psychological Recovery and specific intervention guidelines for these trauma and other syndromes, adapted for post-disaster settings (see http://www.acpmh.unimelb.edu.au/ and http://www.ptsd.va.gov/).

'Recovery' may be very prolonged with the multiple stressors that are the consequence of the disaster, particularly in circumstances of mass catastrophe. Human strengths are reflected in the resilience of communities and cities.[14] There are also profound levels of suffering, particularly for women and children in developing and conflict-affected regions. The capacity for endurance for the good of others through these 'slow' and chronic disasters represents the ultimate in survival of the human spirit.

Although research is critical in understanding and responding to disasters, we must learn from direct and real experience of disaster mental health. The huge death toll and destruction of mass catastrophes, as evidenced in these disasters, most recently with Haiti, create new challenges for the whole world. Preparing by building disaster mental health systems and capability beforehand can facilitate rapid response in the earliest stages of such mass events, as was evident with the Protecting Children in Disasters strategy and the Wenchuan earthquake.

Challenges for disaster psychiatry include encompassing population/public health as well as individual clinical approaches, developing disaster mental health system capacity across the PPRR framework, contributing to the understanding of the complexity of risk perception and response, building a consensus-driven research agenda, and encompassing the significance of spiritual issues, beliefs, attributions and socio-cultural interpretations.

Narrative, testimony and the search for meaning, the emotional repertoire of human response and

mutual support, and the capacity for 'hands-on' action are all important. The response of the community itself, the natural leadership that arises, as evidenced with a Haitian woman looking after her neighbourhood, is one of the indicators of the 'natural' resilience that is a key to survival.[15] These strategies have evolved to master adversity in both 'everyday life' and in circumstances of disaster, of mass catastrophe.

The *human face of disaster* needs to be understood as central, and researched as such. The images, memories of the saved, the dead, the children in need; of the hope, the passion and compassion, the fear, the rage, the guilt, the grief, the helplessness; of the altruism; the consoling and comforting of others, the courage and the 'goodness' that can be mobilized by the vast majority of human beings; should be 'known' and understood, valued and celebrated and researched at every level, from molecular to global.

Conflict of interest

The authors declare no conflict of interest.

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