Societal disruption as a disaster. Exploring suicide, addiction and domestic violence in Australia through a disaster risk reduction lens
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Abstract

Some types of societal disruption can result in health threats and impacts not usually associated with emergency or disaster management frameworks. These frameworks are most commonly aligned to disaster definitions that are largely oriented towards predefined rapid onset hazards, often causing disasters. Disaster risk management is primarily informed by historical data that may not be sensitive to societal disruptions or non-traditional health threats. The aim of this paper is to review the impact of drug addiction, domestic violence and suicide in Australia through the lens of disaster risk reduction. We ask whether they can be considered as disasters themselves according to thresholds and definitions; and whether contemporary health emergency and disaster risk management (HEDRM) practice can be adapted to support action to reduce the impact of these events and inform disaster risk reduction.

Key words: Societal disruption, suicide, drug addiction and domestic violence, disaster risk reduction, Australia
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Introduction

A disaster, as defined by UNDRR is ‘a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts’ (UN, 2016). A slow-onset disaster is defined as one that unfolds gradually over time (UN, 2016). The Sendai Framework for Disaster Risk Reduction 2015-2030 identifies events such as drought, desertification, sea-level rise, and epidemic disease as potential slow onset disasters (UNISDR, 2015). Ranson has described episodic events with dispersed spatial and temporal distribution as ‘diffuse disasters’ (Ranson, 1993).

At the national level, the Australian Disaster Resilience Knowledge Hub uses criteria to define a disaster (Table 1). These criteria vary a little but are largely consistent with those used by the International Disaster Database EM-DAT, often used to inform international reports on impacts of disasters.

Table 1. Disaster Definitions by impacts

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>3, or</td>
<td>Ten (10) or more, or</td>
</tr>
<tr>
<td>Injuries or illnesses / People</td>
<td>20 Injuries or illnesses, or</td>
<td>One Hundred (100) or more people affected, or</td>
</tr>
<tr>
<td>Impact</td>
<td>Significant damage to property, infrastructure, agriculture or the environment; or disruption to essential services, commerce or industry at an estimated total cost of A$10 million or more at the time the event occurred</td>
<td>Estimated damage is reported but not listed as a criteria</td>
</tr>
<tr>
<td>Other criteria</td>
<td>Declaration of a state of emergency, or</td>
<td>Call for international assistance</td>
</tr>
</tbody>
</table>

The 2008 Australian National Security Statement described demographic changes as a potential source of increasing vulnerability to disasters in the Australian community (Rudd, 2008). The statement propelled awareness of non-traditional health threats such as climate change, cyber security, food security, energy security, trans-national crime, globalisation and demographic changes being considered in national security. The Australian National Strategy for Disaster Resilience (NSDR) describes disaster resilience as an approach that seeks to ensure capacity to adapt to new and emerging hazards, reduce exposure to risks, and recover from disasters effectively (COAG, 2011).

The NSDR also identifies several areas of emerging risk and describes a range of social determinants related to disaster vulnerability. This includes changing work-life patterns, lifestyle expectations, demographic changes, domestic migration, and community fragmentation. The Strategy recognises interdependencies of social, technical, and infrastructure systems with disasters and considers risks and risk treatments across the social, built, economic and natural environments (COAG, 2011). As a result, the Strategy prioritises actions to recognise and understand the risks disasters pose to the interests of Australian communities.
This report reviews the extent to which drug addiction, domestic violence and suicide in Australia should be considered through the lens of the Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR, 2015). The goal of the Sendai Framework is ‘the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries’; with ‘a more explicit focus on people and their health and livelihoods’ (UNISDR, 2015). Achievement of this goal is driven by seven targets shown in figure 1.

Figure 1. Targets of the Sendai Framework 2015 - 2030

(UNISDR, 2015)

The Sendai Framework recognizes two groups of hazards: natural and human-induced and identifies societal hazards as one of the five sub-types of human induced disasters (UNISDR, 2015). Contemporary commentary of disasters has led to the questioning of the terminology of ‘natural disaster’, that disasters are related to human influence, and the more recent no natural disasters campaign (Smith, 2006).

The challenge, recognised as a priority area for action in the Sendai Framework, is the need for improved understanding of disaster risk in all its dimensions of hazard, exposure, and vulnerability and to anticipate, plan for, and reduce risk to protect persons and communities (UNISDR, 2015). Schroeter et al propose a model of hazard, vulnerability and exposure intersection of impact effect (Figure 2) (Schroeter et al., 2021). Contextualising hazard, exposure and vulnerability components of an identified impact enables understanding of disaster risk and the creation of risk controls across the prevention, preparedness, response and recovery continuum.
Social disruption and a breakdown in community cohesion is commonly referred to as an outcome, rather than a cause of a disaster (Kreps, 2005). Societal disruption that generates health impacts upon communities is rarely considered or recognised as a disaster. Moreover, if such disruption is increasingly common within a community it is often not recognised as an emerging risk or disaster; or, if the disruption is returning, a re-emerging risk or disaster. Flage and Aven reported categorisation of societal risk as a core global emerging risk. Emerging global societal risks described include: pandemics and infectious diseases; chronic diseases in the developed world; greater economic inequality; breakdown of critical infrastructure; rapid shifts in demographic patterns; and unsustainable world population growth (Flage and Aven, 2015).

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development (UN, 2016). To fulfil its function there is a pressing need to recognise all possible disasters, so that they can be monitored, studied, and their associated risks and drivers reduced.

The impact of drug addiction, domestic violence and suicide upon human health and wellbeing can be associated with each of these disaster impact definitions. Exploration of these impacts through the lens of disaster risk management may inform practice to reduce risk and prevent harm.

Methods

We conducted a literature review to explore drug addiction, domestic violence and suicide as societal disruptions causing disaster. Key Australian government reports describing deaths associated with suicide, domestic violence and drug addiction were identified, following which a constrained snowball sampling was applied to the bibliography of each document to gather further key articles and inform the evolution of the impact of these themes in Australia over the period 2000 – 2018 (Lecy and Beatty, 2012). The search strategy included both peer reviewed and grey literature. We used the search terms ‘social disruption’, ‘non-traditional’, ‘drug addiction’, ‘domestic violence’, ‘suicide’ and ‘societal disruption’ as key words and included articles if they demonstrated an analysis of the theme related to health impact related to disaster settings.
Results

The Australian Bureau of Statistics publication, ‘Causes of Death, Australia, 2016’ defines drug induced death as one directly attributable to drug use (i.e. overdose), or where drugs played a contributory factor (COA, 2016). The report showed an increasing trend of harmful drug use and drug induced deaths over the last decade, measured at that time at 7.5 deaths per 100,000 Australians (ABS, 2017). This figure does not include the additional direct and indirect health, social and economic impact upon families and communities affected by drugs which is estimated to be significant and far reaching (Family and Services, 2007). The effect of drug addiction, a known social health determinant, disproportionately affects vulnerable persons and is recognised in Australia as a cause of poor health with significant social and economic impacts (AloHa, 2016, Collins and Lapsley, 2008). These effects are of equal and in some cases of greater impact than many commonly recognised natural and man-made hazards resulting in impacts classified as disasters. As such drug addiction meets norms of classification of both a driver of, and a cause of disaster risk.

The Family Law Act 1975 defines domestic violence as "violent, threatening or other behaviour by a person that coerces or controls a member of the person's family, or causes the family member to be fearful" (Seddon, 1993). Domestic homicide is defined by the ‘Homicide in Australia 2012–13 to 2013–14 National Homicide Monitoring Program report’ as: ‘incidents involving the death of a family member or other person in a domestic relationship’ (Bryant and Bricknell, 2017). From 2012 to 2014, 200 deaths were caused by domestic violence in Australia (Bryant and Bricknell, 2017), representing an approximate death rate of 0.29 per 100,000 for this period. The effects of domestic violence, like the effects of disasters, extend beyond initial impact and result in long-term health consequences for those affected. Mishra and collaborators conducted a longitudinal study of women’s health in Australia and showed that women who had experienced childhood sexual abuse were more likely to have poor health and depression compared with those who had not (Mishra and Byles, 2014). Similarly, research conducted by Ayre et al showed domestic violence to be the greatest cause of burden of disease for women aged 25–44 in 2011 (Ayre, 2016). Further to this, like the effects of commonly reported disasters, domestic violence results in population displacement and is a leading cause of homelessness for women with children. In 2016 over 100,000 men, women and children sought homelessness services reporting domestic violence as related factor (AIHW, 2019). Vulnerable populations are overrepresented in the impacts of domestic violence in Australia. Over 45% of hospitalisations caused by domestic violence involved people living in the lowest socioeconomic areas of Australia. Between 2017 and 2018 Indigenous Australians suffered more domestic violence than other Australians (Bricknell, 2019). In 2015–16, Indigenous children were 7 times as likely to be the subject of substantiated child abuse or neglect as non-Indigenous children (AIHW, 2019).

The 2010 report, ‘The hidden toll, suicide in Australia’ found that more than 2,000 Australians each year take their own lives; more than one in eight Australians have thought about taking their own life; 4% have made suicide plans and 3% have attempted suicide during their lifetime (CAO, 2010). Since this report the suicide rate in Australia has remained relatively unchanged with greater than 10 deaths per 100,000 people each year (WHO, 2015). A completed suicide is defined by the Australian Bureau of Statistics as ‘a death due to unnatural causes, such as injury, poisoning or suffocation rather than an illness; the actions which result in death must be self-inflicted; and the person who injures himself or herself must have had the intention to die’. Suicide is the leading cause of death among people 15-44 years of age and remains the
leading cause of premature mortality in Australia. In 2016, suicide deaths occurred at a rate of 11.7 deaths per 100,000 people and has consistently ranked in the top 20 causes of death in Australia for over a decade (McNamara, 2013).

The reported average death rate from any disaster in Australia per 100,000 persons by the World Health Organisation from 2012-2016 for disasters was 0.032 (WHO, 1999). Comparatively, all disasters recorded by the EM-DAT database from Australia for the period 2012-2016 (both years included) shows an average yearly death rate per 100,000 Australians as 0.23 (table 3).

Table 3. EMDAT Reported Disasters in Australia by Disaster type and death toll 2012-2016.

<table>
<thead>
<tr>
<th>Disaster Type and Sub-type</th>
<th>Total Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>178</td>
</tr>
<tr>
<td>Convective storm</td>
<td>12</td>
</tr>
<tr>
<td>Flash flood</td>
<td>6</td>
</tr>
<tr>
<td>Forest fire</td>
<td></td>
</tr>
<tr>
<td>Heat wave</td>
<td>139</td>
</tr>
<tr>
<td>Land fire (Brush, Bush, Pasture)</td>
<td>9</td>
</tr>
<tr>
<td>Riverine flood</td>
<td>4</td>
</tr>
<tr>
<td>Tropical cyclone</td>
<td>7</td>
</tr>
<tr>
<td>Viral disease</td>
<td>1</td>
</tr>
<tr>
<td>(blank)</td>
<td></td>
</tr>
<tr>
<td>Technological</td>
<td>88</td>
</tr>
<tr>
<td>Water</td>
<td>88</td>
</tr>
<tr>
<td>Grand Total</td>
<td>266</td>
</tr>
</tbody>
</table>

(EM-DAT, 2021)

Using the EM-DAT database as a reference point for disaster death impacts during the same time period as per the effects of drug addiction, suicide and domestic violence (2007-2017) considered in this report, the average rate of death and total sum of death by all types of reported disasters in the same period is significantly less than the impacts of the societal hazards examined (table 4):

Table 4. EMDAT Reported Disasters in Australia by Disaster type and death toll 2007-2017.

<table>
<thead>
<tr>
<th>Disaster type and sub-type</th>
<th>Total Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>781</td>
</tr>
<tr>
<td>Extreme temperature</td>
<td>486</td>
</tr>
<tr>
<td>Flood</td>
<td>69</td>
</tr>
<tr>
<td>Storm</td>
<td>37</td>
</tr>
<tr>
<td>Wildfire</td>
<td>189</td>
</tr>
<tr>
<td>Technological</td>
<td>182</td>
</tr>
<tr>
<td>Miscellaneous accident</td>
<td>10</td>
</tr>
<tr>
<td>Transport accident</td>
<td>172</td>
</tr>
<tr>
<td>Grand Total</td>
<td>963</td>
</tr>
</tbody>
</table>

(EM-DAT, 2021)
Utilising the Australian Disaster Resilience Knowledge Hub and the international CRED criteria for a disaster (table 1), the impact to human health of drug addiction, domestic violence and suicide upon the Australian population each meet the criteria of a disaster, particularly if considered as a ‘diffuse disaster’ (Ranson, 1993). Impacts of other, possible societal hazards not included in this review such as pollution, obesity and road accidents may well also fit the above criteria.

**Discussion**

One goal of the 2015 Sendai Framework for Disaster Risk Reduction 2015-2030 is to prevent new risks and reduce existing ones. Moreover, these goals include reducing vulnerabilities through actions addressing underlying disaster risk drivers including health determinants or consequences such as poverty, inequality, and marginalization (UNISDR, 2015). The Sendai Framework for Disaster Risk Reduction is a significant change in policy direction in respect to its precursor the Hyogo Framework, bringing a specific focus on health (Maini et al., 2017). This is evident by a shift in focus from disaster management to disaster risk identification, mitigation and management, and emphasis on social and health impacts and their prevention. This change represents an opportunity for improved understanding of identification, classification and measurement of disaster risk itself (UNISDR, 2015). Moreover the increased focus on health outcomes and health system strengthening within the framework showcases the need for a public health approach in managing disaster risk (Murray et al., 2015).

In Australia, disaster risk assessment is guided by the National Emergency Risk Assessment Guidelines (NERAG), the purpose of which is to guide hazard management and prioritize risk management activities (COA, 2010). This approach is congruent with the National Disaster Risk Reduction Framework and the objective of the Australian vulnerability profile to ‘reduce new risks, avoid hazards turning into disasters, be capable and prepared’ (NDRRF, 2018).

When comparing the priorities for action of The Sendai Framework for Disaster Risk Reduction against the Australian National Strategy for Disaster Resilience and National Disaster Risk Reduction Framework it is notable that all identify ‘understanding risk’ as a key action (UNISDR, 2015, COAG, 2011, NDRRF, 2018).

Seeking to understand risk in all its forms implies broadening scope and encouraging new thinking to reset and test our current knowledge and classifications aiming to identify new and emerging risk and societal disruptions. Societal risk has been categorised as a core global emerging risk, and the World Health Organisation and the World Economic Forum include in their rankings and exercises pandemics and infectious diseases; chronic diseases in the developed world; greater economic inequality; breakdown of critical infrastructure; rapid shifts in demographic patterns; and unsustainable world population growth (Flage and Aven, 2015, GAR, 2017, WHO, 2007). These reports also suggest other subjacent risks such as unemployment or rapid migration patterns (GAR, 2017). The Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change by Cardona et al also found that social drivers were related to climate risk. Vulnerability and exposure are reported there as dynamic, varying across temporal and spatial scales, and dependent on economic, social, geographic, demographic, cultural, institutional, governance, and environmental factors (Cardona et al, 2012). Of note, this report described health determinants such as wealth, education, race/ethnicity/religion, gender, age, class/caste, disability, and health status as important causal factors of vulnerability. Whilst the described impacts in this paper have not hitherto been classified as disasters, consideration of them through a disaster risk reduction
lens may be of benefit in understanding and addressing their impacts upon communities and in mitigating their consequences.

In keeping with traditional disaster types the impact of drug addiction and drug abuse disproportionately effects the most vulnerable. This impact is compounded on agriculturally, production based, developing nations where international conventions and drug policies are frequently seen as unduly harsh and unduly favourable to developed, consumer countries (Csete et al., 2016).

The impact of suicide events has been previously described by Ranson as a 'Diffuse Disaster'; where it is temporally and spatially distributed in comparison to most other disasters. As a consequence, causal factors and impact assessment are only appreciated when the events are grouped together (Ranson, 1993). Identifying relationships of disaster hazards where spatial and temporal variation is present has previously been described as cascading interconnected risks (Gill and Malamud, 2016). Similarly, there is an opportunity to network interactions and changes in social vulnerability and improved identification and understanding of new hazards to improve mitigation and risk management activities.

Public health practice, as an evidence-based means of inquiry and action, can provide a guidance to systematically investigate the underlying causes of public health emergencies and disasters, and inform strategies to improve disaster risk reduction. The HEDRM Framework (WHO, 2019) provides a structure to contribute to addressing these social disruptions. Moreover, the addition of a disaster risk reduction lens to existing societal disruptions applied across the continuum of prevention, preparedness, response and recovery may enable new or additional countermeasures to reduce impact. An approach through addressing the social determinants of social disruptions such as drug addiction, domestic violence, suicide, informed by the literature, or, more broadly through the established social determinants of health (Wilkinson and Marmot, 2003), provides a rich paradigm to consider additional, complementary countermeasures. An example application of a disaster risk reduction lens using the hazard, exposure and vulnerability impact model proposed by Schroeter et al and incorporating public health interventions related to drug use and drug addiction is proposed in figure 3:
Figure 3. Exemplars of disaster risk reduction to drug addiction and drug use.

The application of contemporary disaster risk reduction thinking utilising such a model provides an opportunity to explore these, and additional phenomenon through a disaster risk reduction lens and consider additional countermeasures designed to reduce health impacts.

The impacts of drug addiction, domestic violence and suicide could be framed as disasters. A comprehensive approach to prevention, early intervention and treatment, which recognises the underlying drivers of these social disruptions should be implemented to reduce impacts. Such an approach needs to be adequately resourced and should contain a range of strategies aimed at building resilience, reducing hazards, vulnerability and exposure, and providing support to individuals, families and communities suffering the consequences from drug addiction, domestic violence and suicide. Evidence based programs that are effective in reducing harm to both the individual and the community should be supported while funding for interventions of doubtful effectiveness or those accompanied by severe adverse effects should be reviewed; and attention given to the impact on at risk populations. The application of public health tools including the Haddon matrix and associated countermeasures could be undertaken to inform and prioritise disaster risk mitigation activities.
Conclusion

The health impacts on victims of drug addiction, domestic violence and suicide, and the individual and cumulative health impacts upon the affected families and communities meets internationally recognised definitions of a disaster. The impact of drug addiction, domestic violence and suicide disproportionately affects vulnerable populations within communities. Public Health practice through the lens of the determinants of social disruption combined with activities that consider hazards, vulnerability and exposure, can institute prevention, preparedness, response, and recovery programs to reduce the impact of drug addiction, domestic violence and suicide.
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