

ABSTRACT

Little is known about the (in)actions of Australian householders in terms of their disaster risk reduction (DRR) practices. The degree to which top-down, educative methods are effective at prompting householder actions is questioned by practitioners and disputed within the academic literature. However, these methods remain the dominant forms of 'engagement' applied within the emergency services sector. This paper presents the initial findings of an alternative method for engaging householders, which builds relationships between emergency services organisations and the public. A total of 74 Community Engagement for Disaster Risk Reduction (CEDRR) door-knock surveys were conducted with householders in Victoria by volunteers from the Victoria State Emergency Services (VicSES) and Australian Red Cross in partnership with researchers from the University of Melbourne. These findings provide valuable insights into householder (in)action and show intentions and actions resulting from CEDRR engagements. The findings demonstrate there can be effectiveness when engagement is rooted in relationships. This paper offers an empirically supported method that challenges the prevailing educative methods.

'(In)action': rethinking traditional understandings of disaster risk reduction

Isabel Clare Cornes¹, Dr Brian Cook¹, Dr Paula Satizábal¹ and Dr Maria de Lourdes Melo Zurita²

1. University of Melbourne, Melbourne, Victoria.
2. University of New South Wales, Sydney, New South Wales.

Submitted: 5 July 2018. Accepted: 27 September 2018.

Introduction

Without considering the probable impacts of climate change, the tangible and intangible effects of natural disasters in Australia is expected to average \$33 billion annually by 2050 (Deloitte Access Economics 2016, p.12). While predominantly catalysed by hydrometeorological events, disasters are not 'natural' (O'Keefe, Westgate & Wisner 1976) and their costs are not inevitable. Rather, they are the result of entwined social, economic and political factors (Wisner *et al.* 2004). The extent to which householders can influence many of these structural factors is contested. The *National Strategy for Disaster Resilience* (Commonwealth of Australia 2011) states that DRR is based on individuals 'taking their share of responsibility' (p.5). In the context of increased risk, the role of government and the emergency services sector is framed as supporting community DRR actions through top-down education and engagement to achieve behaviour change. However, these approaches are implicitly based on a Knowledge Deficit Model (KDM), which considers lack of knowledge as the main cause of public inaction and the provision of information fundamental to behaviour change (Wynne 2006, Cook & Overpeck *in press*). This framing has long been recognised as ineffective (Paton, Smith & Johnston 2005, State of Victoria 2012), prompting the development of alternative approaches.

This paper presents the findings of 74 face-to-face surveys using the interactive CEDRR methodology, conducted with householders in the City of Whittlesea Council local government area in Victoria. The interactions were led by volunteers from VicSES and the Australian Red Cross in partnership with researchers from the University of Melbourne. These findings are part of an ongoing study assessing the effectiveness of relationship-building activities undertaken between the emergency services sector and the public. This approach is a form of participatory engagement that does not rely on information transfer nor the assumption that information will prompt behaviour change (Cook & Overpeck *in press*). The hypothesis is that nurturing relationships that can be activated by the public may be more effective in generating behaviour change than practices rooted in educative approaches. These relationships may enable a better understanding of the contextual and household decisions that influence their (in)actions.

The findings are of particular interest for practitioners and help emergency services organisations advance their understanding of the rationalities of

householders and reorient engagement activities to support householder decision-making. The findings showed positive impacts from the CEDRR engagement and indicated a need to move away from notions rooted in the KDM concerning householder '(in)actions' in both research and in practice.

(In)action: beyond the Knowledge Deficit Model

Householders are at the frontline of preparation, response and recovery for emergency and disaster events. However, comparatively little is known about their actions and inactions. Despite the acknowledgment that community engagement is a critical part of disaster resilience (Webber *et al.* 2017), education and information dissemination is largely based on predetermined 'expert' objectives and remains the predominant form of 'engagement' in Australian risk management (Elsworth *et al.* 2010). Education, defined in the context of disaster resilience by Dufty (2011, p.36), involves 'planned activities that lead to a prescribed outcome'. Unlike its more collaborative use within the education literature (Freire 1968), education within DRR is a predominantly unidirectional flow of knowledge from 'experts' to the 'public' (Irwin 1995, p.144). The *Victorian Emergency Management Reform White Paper* states:

while significant improvements have been made in the last 10 years, evidence from the VBRC, Floods Review, research and agency experience indicates that the current reliance on information dissemination only helps a limited number of people who are at risk. (State of Victoria 2012, p.7).

Underlying this approach is the assumption that householders fail to understand risk (Irwin, Dale & Smith 1996) and are perhaps ignorant or unaware and, as a result, are unprepared. Current engagement activities have been unable to escape the KDM and there are few examples of alternative participatory approaches (Elsworth *et al.* 2010). Further, attempts to scale examples of successful participatory engagement have failed to be effective in other contexts (Phillips 2015). Following Arnstein's (1969) *Ladder of Participation* and the IAP2 International Federation (2014) *Public Participation Spectrum*, the most effective forms of participation result in the empowerment of the public; 'informing', 'consulting' and 'educative' approaches are deemed tokenistic because power remains with 'experts'. This understanding of participation distinguishes between methods that focus on information transfer and those that implement effective participation for change. Those methods reliant on information transfer are not judged as meaningfully participatory.

Education as 'engagement' is used by emergency services organisations when using information flyers, advertising campaigns and community forums as primary communication methods for more traditional DRR actions. These actions, reliant on being prompted

by awareness raising, include having a documented home escape plan (Cook & Melo Zurita 2016), a working smoke alarm, a fully stocked emergency kit, backups of important documents, first aid training as well as insurance coverage (Victoria State Emergency Service 2018). There is little rigorous and representative state or national data regarding the adoption of these measures by householders, nor studies that analyse the adoption of these actions following 'awareness raising'. The most recent assessment of household preparedness for emergencies was conducted by the Australian Bureau of Statistics (ABS) in NSW, Queensland, Victoria and the ACT in 2007 (ABS 2008). Examining these statistics based on 'traditional' household actions, Nicolopoulos and Hansen (2009, p.66) identified the need to develop context-specific preparedness programs because a one-size-fits-all approach to DRR is not effective. While these traditional actions in themselves are important and form part of any DRR program, the prevailing focus on information transfer to prompt action may overshadow alternate forms of engagement with householders that accomplish similar objectives but that do not rely on the KDM.

While the language of community participation and engagement is prevalent in policy within the emergency services sector, there are few examples of engagements that do not rely on the KDM (Elsworth *et al.* 2010) and little research exploring the effectiveness of the efforts that rely on educative approaches. The *Community Engagement Framework* for the NSDR highlights 'an approach that seeks to empower communities is relatively new in the emergency management sector' (Commonwealth of Australia 2013, p.3). Arbon and colleagues (2013) developed a tool for government, non-government and community groups to measure and identify householder resilience that facilitated conversations with those identified as likely to be vulnerable. Their purpose was to provide relevant information, raise awareness and promote the uptake of existing support services. This effectively reimplements a KDM approach with a participatory 'vener'. The program targeted vulnerable householders rather than a randomised whole-community approach, which may inhibit extrapolation of findings. Webber and colleagues (2017) sought to apply participatory approaches in workshops in three NSW localities. This attracted a small, non-representative sample of community members. The engagement approach and understanding of community perspectives used were predefined by 'expert' reference groups.

Within this educative paradigm of DRR, actions taken by householders are judged relative to expert-determined benchmarks. This results in an action-inaction divide that ignores the often logical, rational and conscious decisions 'to not' implement a particular response. Emerging research challenges the assumption that lack of information and awareness are the main contributors to (in)action in households (Meusburger & Werlen 2017, Slovic *et al.* 2004). Further compounding this, engagement activities delivered via educative methods have not been shown to affect behaviour

change (Abunyawah, Gajendran & Maund 2018). Thus, the prevalence of the KDM approach and associated knowledge practices, alongside the absence of evidence to support its effectiveness, suggest that the language of engagement and participation has, to date, been unable to overcome the entrenchment of KDM forms of participation.

The CEDRR methodology was developed in response to the challenges raised by practitioners and within the literature, and to collect rigorous data to explore participation in greater detail.

Building relationships rather than awareness

The CEDRR methodology was developed to facilitate effective and participatory community engagement between emergency services personnel and the public, placing relationship building at its core rather than information transfer. The methodology uses interactions founded on mutual respect and equality. Ideally, trust results from the interactions rather than being presupposed. There is care and a long-term commitment to mutual betterment as well as continuous efforts to use dialogue to contribute to mutual learning (Freire 1968).

CEDRR views face-to-face dialogue as the basis for engagement. The method draws from the psychological literature on the Hawthorne effect (McCambridge, Wittonn & Elbourne 2014), which demonstrates that the act of engagement has a potentially significant, and often overlooked, impact on the behaviour of all participants, as opposed to the content of the engagement (e.g. information transfer). Research by Brockman and Kalla (2016) on reducing transphobia and Bond and colleagues (2012) on political mobilisation, demonstrate the possibilities of such methods and highlights the significant role of face-to-face relationship building in facilitating attitudinal and behavioural change. Research by Aldrich (2012) on the role of social capital highlights the importance of social networks and relationships in response and recovery phases. Drawing together the work by Bourdieu (1986) on forms of capital and recent participatory research (Chilvers & Kearnes 2016, Cooke & Kothari 2001), the method does not presuppose 'what publics want' or 'what publics should do'. Rather, nurturing social relationships (Melo Zurita *et al.* 2017) is something that the public can activate if they choose and on their terms.

The face-to-face survey used to initiate the relationship building involved pairs of emergency service personnel. The CEDRR survey was delivered via a tablet connected to the 4G network and took a minimum of ten minutes to complete, depending on the level of enthusiasm. The interaction involved back-and-forth dialogue between the interviewer and the household to establish perceptions and to provide opportunities for mutual learning. The survey was comprised of questions regarding 'traditional' risk-reduction actions in addition to allowing the interviewees to identify and add other responses relevant to their circumstances,

which updated in real time. This allowed assessment of the state of preparedness of households in addition to raising of 'non-traditional' concerns and actions. Householders could volunteer to participate in a follow-up interview. The CEDRR methodology facilitated interaction between emergency services volunteers and householders and sought to build a relationship; relying less on awareness, cognition and commitments.

The survey is at www.communityriskreduction.org.au. The aggregated data is available to view online and is anonymised in accordance with University of Melbourne's ethics policy. This research was approved by the University of Melbourne Human Ethics Committee (1750250.1).

Case study

Whittlesea is a township situated in the northern suburbs of Melbourne, Victoria. It is a rapidly growing and large municipality (489km²) with a population of 207,881 that is estimated to increase to 333,700 by 2036 (City of Whittlesea Council 2017, p.88). It is culturally diverse, with 49 per cent of residents speaking a language other than English at home and 42 per cent of residents having been born overseas (City of Whittlesea Council 2017, p.14). Householders within the local government area are exposed to a variety of hazards, particularly bushfire, grassfire and flooding as well as a number of hazards identified in the CEDRR survey. Recent events affecting Whittlesea include the 2009 Black Saturday bushfires, the 2013 and 2015 Epping grassfires and significant flash flooding following storms in December 2016.

Survey sample

Households were identified based on a random sample of 70,987 private residences across 18 suburbs that comprise Whittlesea (ABS 2017). The randomised data points were allotted in clusters of six residences that were systematically visited until a resident was available and willing to take the survey. This became the data point for the cluster. Of the 476 households door-knocked, 74 householders were home and willing to complete the survey, representing a 16 per cent completion rate. Surveys were conducted over three weekends between February and May 2018. Of the 74 completed surveys, 64 provided demographic data. While demographic data is useful for contextualising the household, it is important to recognise its limitations in effectively predicting the vulnerability and (in)actions of householders (Nicolopoulos & Hansen 2009).

Demographic characteristics of respondents were:

- 48 per cent identified as female
- the median age of participants was 35–44 years
- 73 per cent owned their own home; the remainder rented

- 49 per cent had lived at the current address for more than five years
- 47 per cent had lived in Australia their entire lives, 35 per cent had lived in Australia more than 10 years and 17 per cent less than 10 years
- 24 per cent were single-person households, 8 per cent were single with dependents, 37 per cent were two-person households and 31 per cent were two-person households with dependents
- 19 per cent considered themselves part of a group particularly vulnerable to large-scale emergencies or disasters
- 68 per cent identified as 'Caucasian', 17 per cent identified as 'Asian', 5 per cent identifies as 'African', 5 per cent identified as 'Multiracial' and 5 per cent as 'Other'
- while English was the predominantly spoken language, 25 per cent indicated other languages including Macedonian, Punjabi, Persian, Arabic, Mandarin, Greek, Hindi and Sinhalese
- the median annual income of this sample was \$65,000–\$77,999.

Results

Broadening traditional understandings of risk and (in)action

Survey participants identified a range of 'large-scale emergencies' they expected to face in the coming ten years. Responses included commonly understood emergencies such as bushfires, grassfires, house fires, flooding, wind and storm. These accounted for 44 per cent of responses. In addition, respondents considered crime, airline crash, building collapse, medical emergencies, terrorism, power outages, car accidents, getting lost, bomb scares, increased traffic, incidents involving kangaroos and pet-related emergencies as 'large-scale emergencies' that they expected to experience. This range of 'non-traditional' responses gives insight into the values shaping the actions of householders, their perceptions of risk and the context in which they live. Further, it suggests the relational nature of risk perception (Kamstra *et al.* 2018). For future emergencies, 23 per cent of respondents stated that they expected to experience 'none', while 11 per cent stated they 'don't know' which emergencies they may experience. In addition, 66 per cent of respondents believed climate change would contribute to an increased frequency and severity of large-scale emergencies that they expect to experience. It is worth noting that a number of householders identified 'large-scale emergencies' unrelated to climate. While some householders did not expect to experience any large-scale emergencies, they did believe that climate change was going to have a future impact on emergencies. Given the inherent uncertainty of risks and the effects of climate change, this mix of responses is not surprising and not insignificant, with similar discrepancies outlined in previous research (Cornes & Cook 2018).

In total, 28 per cent of householders stated they had done 'nothing' to prepare for a large-scale emergency. The responses for preparatory actions undertaken from the remaining respondents were diverse. These included actions such as having spoken to children, cutting down trees, installing safety switches, window shutters, security alarm systems, insurance, clearing leaves away from the property, clearing gutters and having a fire extinguisher or fire blanket. On average, householders identified two preparatory actions. These findings are interesting given that the majority of householders believed they were exposed to 'few' or 'average' amounts of risk on a daily basis.

Survey interactions identified inconsistencies in responses. For example, only 11 per cent of respondents indicated they had a smoke alarm when asked about the preparedness actions they had taken. However, 81 per cent of respondents had checked their smoke alarm battery in the last 12 months. This inconsistency raises the challenge of how DRR (in)actions are understood by householders, especially when contrasted with the ways emergency services personnel define actions and knowledge. Such findings can be considered in light of previous research using the CEDRR methodology in which actions and experiences were identified in follow-up interviews that were not given during the initial survey (Cornes & Cook 2018). This could possibly be due to the 'cold-call' nature of the door-knocking method and because people tend not to actively consider DRR during daily life.

Intentions

Commitments or intentions to act and to engage with an issue is key to behaviour change. In the survey, respondents were asked whether they intended to undertake 'traditional' risk reduction activities as a result of participating in the interaction. Some householders acted immediately with the support of the emergency service volunteers. A significant number made verbal commitments or intentions to undertake activities. These are significant contributors to household resilience resulting from CEDRR engagements.

Of the 19 per cent of respondents who indicated that they had not checked their smoke alarm in the last 12 months, 4 per cent checked their smoke alarm immediately as a result of the survey. In total, 41 per cent of respondents had an existing escape plan. An additional 4 per cent completed a plan with the assistance of the emergency services volunteers and 35 per cent stated they intended to create a plan as a result of the survey. Interestingly, 4 per cent of respondents who checked their smoke alarm immediately were different from the 4 per cent who completed the home escape plan immediately as a result of the engagement. However, 20 per cent of respondents stated they were not interested in creating a home escape plan. This may stem from householders living alone, having no dependents or being very familiar with their property. Another, 18 per cent had an emergency kit in the home at the time of the survey, 35 per cent stated that they intended to assemble one and 4 per cent stated they did

not need one. The majority of households had a first-aid kit and 4 per cent indicated the intention to purchase a first-aid kit. In addition to 59 per cent being able to perform first aid, 8 per cent stated they intended to enrol in a course as a result of the survey. A further 35 per cent intended to update their first aid certification and 14 per cent stated they would consider updating their first aid certification as a result of the survey.

While it is recognised that such intentions are not actions, the verbal commitment or 'intention to prepare' is a significant contributor to behaviour change (Paton, Smith & Johnson 2005, p.27). The follow-up component of the research, which is underway in 2018, will assess whether these commitments and intentions resulted in actions. Importantly, 85 per cent of householders agreed to a follow-up visit. This suggests that participants valued the engagement and are willing to participate further.

Building relationships

While the CEDRR methodology provides useful data to understand the perceptions and (in)actions of people, its objective is the facilitation of meaningful dialogue between householders and their local emergency services organisations, which provides opportunities to build relationships. The input of householder responses creates an environment of participation and co-production of knowledge (Chilvers & Kearnes 2016). Interactions that occur with the public in a dignified manner (Hicks 2011) create opportunities to form relationships and networks that the public has the option to (re)activate if, and when, they choose. The positive responses to the request for a follow-up interview suggests that the majority of householders are open to building relationships with their local emergency services organisations.

These findings demonstrate that building relationships can provide vital, locally specific information to help contextualise householder choices for (in)action. It is important to avoid assumptions that the rationality for (in)action in households is reflective of a level of awareness, ignorance or education. This CEDRR survey was an opportunity for the public to draw on relationships with emergency services and to change their behaviour on their own terms. Furthermore, with subsequent visits planned, there will be further opportunities to nurture the relationships, which may contribute to householders taking further actions.

Conclusion

These preliminary results offer an assessment of the effectiveness and relevance of relationship building as a method of participatory engagement that contrasts with existing top-down, educative approaches. The immediate actions taken, in addition to verbalised intentions to act and the openness towards future interactions, suggest tangible outcomes from this engagement activity that contributes to the resilience of householders. Additionally, this research challenges prevailing notions of (in)action, reason and rationality in relation to householder vulnerability and resilience.

Given the predicted costs of future disasters, effective engagement activities that acknowledge the complexities of householder (in)action and that encourage public-chosen and led actions is critical for building resilience into the future.

Acknowledgments

The authors thank the Victoria State Emergency Service and volunteers (Gary, Seb, Clementine, Gavin, Tony, Cynthia, Kelly, Louise, Chantel, Sanjeev, Steve, Lisa, Will, Les and Sabrina), the Australian Red Cross (Jess and Wil), the Whittlesea SES Unit and the City of Whittlesea Council as well as Learning Environments at the University of Melbourne and University of New South Wales for providing support for CEDRR. This research is funded by the University of Melbourne Engagement Grant, Victoria State Emergency Service, Melbourne Water and the Australian Government Research Training Program Scheme.

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About the authors

Isabel Clare Cornes is at the University of Melbourne researching household risk, (in)actions, behaviour change and the role of social capital.

Dr Brian Cook is a senior lecturer at the University of Melbourne. His research examines the role of scientific knowledge in environmental governance relating to water and flood management.

Dr Paula Satizábal is a research assistant at the University of Melbourne. Her research examines how political economic processes shape environmental governance institutions, power and knowledge and how communities respond.

Dr Maria de Lourdes Melo Zurita is a geographer at the University of New South Wales. Her interests include feminist approaches to disaster risk reduction, participation and community engagement..