The Effectiveness of One's Decision to Report on Emergency Situation Victims: A Systemic Literature Review

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Abstract. Reporting on victims of an emergency by community members has been generally made. However, the effectiveness of such action is still in question. The ever-changing condition in the accident site and the community's readiness to encounter it requires their preparedness. This literature review aims to learn about the factors that influence decisions to report on emergency victims through the 119 call center from the previous study. These factors were obtained from searching in a number of journals from Scopus, ScienceDirect, and PubMed. Failure to report on victims can be affected by perception, knowledge, attitude, and ineffective preparedness in the community. The literature from this paper will come to the conclusion that the factors related to the act of reporting on victims become an important consideration. Communication, language, and technology have become the most critical factors that influence someone to report when they find victims. In the future, the direction and challenge of this study are to involve the community in emergency responses and to improve the communication and technology system to be more user-friendly.

Keywords: response · emergency · effectiveness · preparedness

1 Introduction

Accidents and medical emergencies require fast and proper responses to prevent more serious injuries or death from happening. The action starts when a victim is found until further assistance by the emergency department or hospital. More than 1.2 million people in the world die from traffic accidents, and a lot more suffer from injuries that result in a lower quality of life. Data on traffic accidents as a cause of death in 2013 on average there is 17.4 per 100,000 population globally and 19.9 per 100,000 population in Asia [1, 2].

The problem in some countries is that the speed and accuracy of the decision-making to report on emergency victims made by someone through 119 call centers cannot all be

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done [3]. One's risk perception of accident victims, their knowledge, as well as fast and accurate attitude towards the situation and how they assess the risks of losing people's lives or possible injuries caused by accident are not the same [4]. It takes a fast and accurate response to report on victims in order for the ambulance to arrive immediately. Determination of risks on a victim made by someone is to implement emergency response in an integrated manner [5].

2 Review Method

This study observes people's actions to make a quick decision to report on emergency victims. For the purpose of this study, identification, evaluation, and analysis of all studies relevant to answering this study's question and interesting study topics are taken. This review is based on the previous study [6] that covers:

2.1 Planning the Objectives

In planning a review the research questions are determined according to the variables to be sought from previous studies. The questions are as follows Q1. What is the public perception of the risks of danger to emergency victims? Q2. How do knowledge and attitude affect emergency situations? Q3. What is someone's readiness to make a decision to report an emergency victim? Q4. What are the factors that influence a person's decision to report an emergency victim?

2.2 Doing the Review

The stages in the review are an explanation of the research search process and details of the qualitative process for screening documents. The collection of journals selected in this review identified the relevant matters for decision-making by someone to report on an emergency victim. The journals include Scopus, ScienceDirect, and PubMed. This database allows searching through various things such as title, author, keyword, abstract, previous research references, publication year, and document type. This study focuses on the title, abstracts, and keywords in the search. By using this method, it is expected that a number of documents can be generated. In order to obtain satisfactory results from this paper, we created some keywords, namely, response, emergency, effectiveness, preparedness, and community readiness, as the search requirements. In the data-collecting process, it is possible to obtain similar documents due to the same keywords. Identical documents from different sources will go through a removal process to avoid duplications in the database. Document sorting is done in accordance with inclusive and exclusive criteria to assess every outcome in the qualitative review. The document selection process is illustrated in Fig. 1. Document Selection Workflow.

3 Review Results

In the search for journal documents, 174 articles were obtained from ScienceDirect, 336 articles from Proquest, and 408 articles from Pubmed, a total of 918 articles. Next, identical or duplicated articles are identified and the articles that are out of the topic

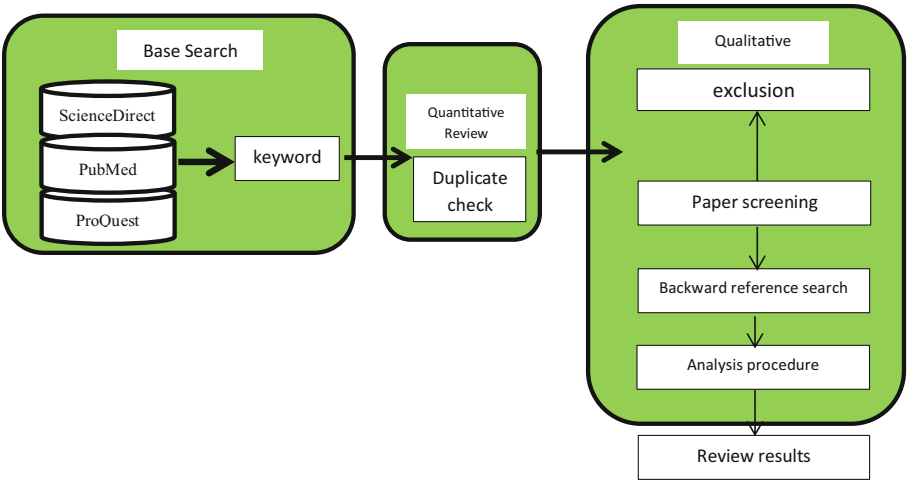

Fig. 1. Document Selection Workflow

are excluded. There are 54 articles from Proquest and 23 articles from ScienceDirect, and 25 from Pubmed that make up the total 102 articles. The inclusion criteria of this sorting process are documents that discuss the response time of emergency response management, first aid, and community preparedness Publishing years must be between 2015 and March 2019. For the presentation, we will submit it in accordance with the answers to this literature review study question. One's perception depends on ways of inspection, visible risk management, technology development, access to health services, relevant regulations, affordable costs by the community, and availability of guidelines on or instructions in facing emergency situations and whether or not there is any industry located in their residences [7, 8]. Failure to assess the victim's risks leads to increased risks, and a specific plan for better responses is required [9, 10]. Telemedicine services sometimes become an alternative to giving information on how to assess victims' risks in an emergency situation [11]. Insufficient knowledge, challenging access to health services, and lack of health workers have caused people to hesitate to report on victims [12]. Plans are made based on one's condition and risk perception to make a proper emergency response procedure and relevant policies [13]. This planning is to lower risks born by the victims of an emergency situation and in order for people to understand emergency situations at all risk levels [14]. Communication technology is used to boost people's assurance of reporting on emergency victims. It can reduce the risk of the victims due to lack of information, build public trust in the system, and improve the preparedness, response time, and decision to report on emergency victims [15, 16]. Communication issues in an emergency situation become an obstruction for people to receive or make a phone call to and from 119 call centers [17, 18]. This community limitation should be considered as necessary training and simulations using communication and technology are required [10, 19, 20]. Different perceptions will affect the decisions to report on emergency victims through the system [21–24]. The community is socially vulnerable, including elderlies with risks, and the ability to respond depends on the existing

condition [25–27]. Even a close relationship with a victim may cause a delay in taking action or, on the contrary, speeds up such action [28, 29]. Improving one's knowledge in the community through a simulation is still an issue in some areas, and the quantity and effectiveness differ in each region [17, 19]. Simulations have been conducted in public regarding decision-making to report victims effectively [30–32]. Education on emergency cases needs to be provided to students at school, involving partnership and improving their self-confidence [33–37]. The concerns are the lack of decisions to report on victims as a consequence of the absence of people making up their minds. Additionally, information on risks is unavailable in the media: television and telephone [38, 39]. One's attitude towards an emergency situation is affected by social state, ecology, or past experiences. Control of emergency situations will be better in an enabling environment [40]. Trust in the system is becoming important, supported by trustworthy and accurate information to eliminate uncertainty existing in an emergency situation [41]. Fast responses help create positive attitudes within the community. Development is done to improve the demands existing within the community [42]. Lack of coordination and command in encountering victims left the community with the perception that the system was ineffective [43]. Uncertain conditions in decision-making may be due to a lack of trust in the stakeholders that discourage individual performance in handling an emergency situation. Emergency response team coordination is essential to control an ongoing emergency situation [44]. Simulation and training activities can improve trust in the current system [42, 45]. The community's decision to report on victims is influenced by a number of factors, including situational awareness at the location and information on the instruction given by the reporting person can expedite the reaction time [46]. The decision to report on victims will be easier if various case simulations have been carried out, including dealing with persons with disabilities or vulnerable communities [47–49]. This decision is very tactical; therefore, it poses some challenges to be implemented by the community [46]. Understanding the situation through accessing effective information in the coordination and communication by computational technology in simulation training helps immensely for the community to make a decision to report on victims [50–53]. This community preparedness, supported by the preparedness of the organization responsible for the task, make the appropriate resources necessary to handle emergency situations [24, 54]. A post-mortem by forensic officers can provide information on the improvement of instruction to be followed [55]. Community preparedness is influenced by access to health services, knowledge of the emergency situation, active public participation in emergencies, and strong cooperation between the government and NGOs [56]. Readiness is closely related to individual and communal ability factors. Adherence to an integrated system and good coordination affect the decision to report on victims as a system activation [57–60]. Systems that involve more than one organization can have different actions due to different infrastructures and facilities [61, 62]. Different organizational communication systems lead to different decisions to report on victims [10, 14]. Coordination in different work areas is needed for actions, financing, and one's role in the community when reporting on victims [63]. A person who helps must carry out the respondent cycle, avoiding group interests, social roles, community participation, communication, coordination, and smartphone application technology in dealing with emergencies [64–69]. The availability of alternative transportation should be considered

to avoid traffic congestion and good infrastructure consisting of physical as well as social, cultural, and governance infrastructures [15, 70–76]. The decision to report on the victim relates to the response time of the rescue and access to transportation to the scene, especially to bring the victim to a better medical facility [77–79]. Community involvement in planning can increase the level of trust in officers [80, 81]. The community without access to emergency communication will worsen the victim's condition [30, 82]. The use of social media such as Facebook can make it easier for officers to communicate with the community, especially as a media to promote the organization [83]. The timing of reporting, the accurate triage assessment, and the transportation of the victims properly can reduce the mortality rate [30, 82, 84]. The scenario of emergency management after a report has been received must be reviewed to see any improvement in effectiveness in engaging the community [81, 85–89]. The availability of clear instructions for effective and efficient actions will increase the time to make a decision to report on victims by the community [90, 91]. Economy factors will also affect the decision to report on victims [92]. The factors affecting a person's decision to report on victims are presented in Table 1. Variables Influencing Decisions to Report on Victims.

Table 1. Variables Influencing Decisions to Report on Victims

Influencing factors	**Reference**	
Knowledge	[10, 12, 19, 32, 36]	Community decision to report on victims
Health services	[9–11, 77]	
System and planning	[13, 57, 60]	
Risk Perception toward Emergency	[14, 24, 40, 54, 65, 93]	
Guidance/Guidelines	[14, 38, 90, 91]	
Communication, language, and Information	[15, 17, 18, 20, 39, 50, 51, 53, 67–69, 81–83, 94]	
The technology of emergency situation	[20, 52]	
Past experiences	[30]	
Roles of officers	[42, 95, 96]	
Effective coordination	[43, 50, 81, 95]	
Structured and comprehensive system	[45, 57, 61]	
Public awareness	[46]	
Public participation	[56, 64, 65, 81, 87, 89, 95]	

(*continued*)

Table 1. (*continued*)

Influencing factors	Reference	
Continuous improvement	[55]	
Access to ambulances and hospitals	[70–73, 75, 76]	
Scenario and simulation	[48, 51, 85, 86]	
Socio-culture and economy	[25, 66, 78, 97, 98]	
Different Conditions among regions	[63, 99]	
Closest people and vulnerable families	[27, 29, 49]	
Rescue kits	[79]	
Behavior during emergency	[16, 21]	
Various cases of emergency	[47]	
Perception and expectation	[7, 8, 23]	
Various action plans	[62]	
Role of education	[26, 28, 33, 37]	
Infrastructure hard and soft	[74]	

4 Discussion

4.1 Summary of Evidence

Previous research has ushered in critical variables that this paper discusses. Victim rescue through the act of calling the emergency response results in effective emergency services and better response time, which will be discussed based on previously studied variables.

Communication, Language, and Technology

A review of a number of articles shows that certain research variables gravitate toward the decisions made by certain individuals to call the emergency service. This has been the highlight in the application of the emergency reporting system: information technology and language hold the utmost importance in improving the emergency service and response time to victims. The accident response system will work effectively if the communication system is integrated into the 119 emergency call center and mobile apps. The public must be benefited from the technology of the app in terms of its usage and existing infrastructure. Future communication systems and app technology have to be

adjusted to people's cultures and perceptions. Social status, educational background, and the public's care of emergency response have affected the existing culture.

Public Participation
A review of previous research shows that public participation in calling the emergency service during accident response is valuable due to the evolution and dynamics of social fragility. As a result, public participation will be useful in the effective implementation of planned accident response management. The development of research models employing in-depth information may illustrate the impact on public participation, officers' roles, and access to the system [63, 96–99]. The role officers play in a system may boost people's confidence in the accident response system. Trust in the system and officers—as well as perception in taking actions—will be ultimately significant for public participation in making a decision. Analysis of any public values must be carried out to ensure that a decision is taken according to a case. Public participation should be taken into consideration when applying a system in the future so that accident handling is effective and response time improves.

Risk Perception
It is important to have risk perception during accident response due to the fact that it will affect values that relate to response handling. The fault in making value will degrade concern toward the existing situation, and in turn, lacks efficacy and loses response time. Previous research has mostly discussed risk perception, which will affect an individual's decision during an emergency response. Attempts must be made to introduce risk and danger in the midst of the public. The upgrade in risk recognition will boost people's concerns.

Access to Ambulances and Hospitals
Previous research focused on the decent availability of ambulance and referral hospitals in emergency response calls. A program that makes available adequate ambulance may address various problems in its access. In order for the ambulance to perform more effectively and record better response time, identification is required. Moreover, the availability of hospital beds may also help create effective action and better response time. Access to the ambulance and hospital beds may collaborate in reducing the distance travelled. The sooner the victim is handled, the better for her safety.

5 Conclusion

This paper seeks to identify the many factors that have been subject to various research relevant to one's readiness in making the decision to call the emergency service based on the literature review. Previous studies have primarily focused on issues concerning language, technology, public participation, risk perception, access to ambulance services and hospitals, and, in particular, communication and information technology. Further study is required to achieve effective emergency services and better response time. This paper primarily illustrates the current state of the public—as well as how an individual decides upon noticing an emergency situation—as revealed in several articles and questionnaires.

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References

1. World Health Organisation. *Global status report on road safety. Injury prevention* (2015) https://doi.org/10.1136/injuryprev-2013-040775.
2. World Health Organization. *Post-Crash Response.* (2016).
3. Gai, W. mei, Deng, Y. feng, Jiang, Z. an, Li, J. & Du, Y. Multi-objective evacuation routing optimization for toxic cloud releases. *Reliab. Eng. Syst. Saf.* (2017) https://doi.org/10.1016/j.ress.2016.10.021.
4. Jonkman, S. N., Van Gelder, P. H. A. J. M. & Vrijling, J. K. An overview of quantitative risk measures for loss of life and economic damage. *Journal of Hazardous Materials* (2003) https://doi.org/10.1016/S0304-3894(02)00283-2.
5. Bottelberghs, P. H. Risk analysis and safety policy developments in the Netherlands. *J. Hazard. Mater.* (2000) https://doi.org/10.1016/S0304-3894(99)00072-2.
6. Martínez-Rojas, M., Pardo-Ferreira, M. del C. & Rubio-Romero, J. C. Twitter as a tool for the management and analysis of emergency situations: A systematic literature review. *International Journal of Information Management* (2018) https://doi.org/10.1016/j.ijinfomgt.2018.07.008.
7. Lestari, F. *et al.* Analysis of Complexities in Natech Disaster Risk Reduction and Management: A Case Study of Cilegon, Indonesia. *J. Disaster Res.* (2018) https://doi.org/10.20965/jdr.2018.p1298.
8. Jibiki, Y. *et al.* Exploring Community Preparedness for Complex Disaster: A Case Study in Cilegon (Banten Province in Indonesia). *KnE Life Sci.* (2018) https://doi.org/10.18502/kls.v4i5.2556.
9. Kettaneh, A. A. & Slevin, J. R. National Module for Helping Individuals with Physical Disabilities In Disaster Events. *J. Appl. Rehabil. Couns.* (2014).
10. Mcgrady, E. & Blanke, S. J. Twelve Best Practices to Mitigate Risk Through Continuity Planning and a Scorecard to Track Success. *J. Manag. Policy Pract.* (2014).
11. Traore, B. B., Kamsu-Foguem, B., Tangara, F. & Tiako, P. Software services for supporting remote crisis management. *Sustain. Cities Soc.* (2018) https://doi.org/10.1016/j.scs.2018.02.029.
12. Curran, J. *et al.* Conceptualizing and managing medical emergencies where no formal paramedical system exists: Perspectives from a remote indigenous community in canada. *Int. J. Environ. Res. Public Health* (2018) https://doi.org/10.3390/ijerph15020267.
13. Carr, J. & Jensen, J. Explaining the pre-disaster integration of Community Emergency Response Teams (CERTs). *Nat. Hazards* (2015) https://doi.org/10.1007/s11069-015-1664-3.
14. Othman, S. H. & Beydoun, G. A metamodel-based knowledge sharing system for disaster management. *Expert Syst. Appl.* (2016) https://doi.org/10.1016/j.eswa.2016.06.018.
15. Hyvärinen, J. & Vos, M. Developing a Conceptual Framework for Investigating Communication Supporting Community Resilience. *Societies* (2015) https://doi.org/10.3390/soc5030583.

16. Liu, X., Xu, Y., Ge, Y., Zhang, W. & Herrera, F. A group decision making approach considering self-confidence behaviors and its application in environmental pollution emergency management. *Int. J. Environ. Res. Public Health* (2019) https://doi.org/10.3390/ijerph16030385.
17. Nakamura, H., Umeki, H. & Kato, T. Importance of communication and knowledge of disasters in community-based disaster-prevention meetings. in *Safety Science* (2017). https://doi.org/10.1016/j.ssci.2016.08.024.
18. O'Brien, S., Federici, F., Cadwell, P., Marlowe, J. & Gerber, B. Language translation during disaster: A comparative analysis of five national approaches. *Int. J. Disaster Risk Reduct.* (2018) https://doi.org/10.1016/j.ijdrr.2018.07.006.
19. Viverita, V., Kusumastuti, R. D., Husodo, Z. A., Suardi, L. & Danarsari, D. N. Households Perceptions on Factors Affecting Resilience towards Natural Disasters in Indonesia. *South East Asian J. Manag.* (2016) https://doi.org/10.21002/seam.v8i1.3099.
20. Huang, Q. & Xiao, Y. Geographic Situational Awareness: Mining Tweets for Disaster Preparedness, Emergency Response, Impact, and Recovery. *ISPRS Int. J. Geo-Information* (2015) https://doi.org/10.3390/ijgi4031549.
21. Maldonado, A., Collins, T. W. & Grineski, S. E. Hispanic Immigrants' Vulnerabilities to Flood and Hurricane Hazards in Two United States Metropolitan Areas. *Geogr. Rev.* (2016) https://doi.org/10.1111/j.1931-0846.2015.12103.x.
22. Martin, S. A. A framework to understand the relationship between social factors that reduce resilience in cities: Application to the City of Boston. *Int. J. Disaster Risk Reduct.* (2015) https://doi.org/10.1016/j.ijdrr.2014.12.001.
23. Huang, S. K., Wu, H. C., Lindell, M. K., Wei, H. L. & Samuelson, C. D. Perceptions, behavioral expectations, and implementation timing for response actions in a hurricane emergency. *Nat. Hazards* (2017) https://doi.org/10.1007/s11069-017-2877-4.
24. Diakakis, M., Priskos, G. & Skordoulis, M. Public perception of flood risk in flash flood prone areas of Eastern Mediterranean: The case of Attica Region in Greece. *Int. J. Disaster Risk Reduct.* (2018) https://doi.org/10.1016/j.ijdrr.2018.03.018.
25. Bastaminia, A., Rezaei, M. R. & Dastoorpoor, M. Identification and evaluation of the components and factors affecting social and economic resilience in city of Rudbar, Iran. *Int. J. Disaster Risk Reduct.* (2017) https://doi.org/10.1016/j.ijdrr.2017.01.020.
26. Corwin, K. A., Brand, B. D., Hubbard, M. L. & Johnston, D. M. Household preparedness motivation in lahar hazard zones: assessing the adoption of preparedness behaviors among laypeople and response professionals in communities downstream from Mount Baker and Glacier Peak (USA) volcanoes. *J. Appl. Volcanol.* (2017) https://doi.org/10.1186/s13617-017-0055-8.
27. Shapira, S., Aharonson-Daniel, L., Clarfield, A. M. & Feder-Bubis, P. Giving a voice to medically vulnerable populations: A mixed-methods investigation of their unique perceptions and needs in emergency situations. *Heal. Soc. Care Community* (2020) https://doi.org/10.1111/hsc.12911.
28. Shentu, T., Ma, J. & Guo, Y. Social attachment shapes emergency responses: Evidence from a postfire study. *Soc. Behav. Personal. an Int. J.* (2018) https://doi.org/10.2224/sbp.6946.
29. ASHIDA, S., ROBINSON, E. L., GAY, J. & RAMIREZ, M. Motivating rural older residents to prepare for disasters: moving beyond personal benefits. *Ageing Soc.* (2016) https://doi.org/10.1017/s0144686x15000914.
30. Bachman, S. L. *et al.* The impact of trauma systems on disaster preparedness: A systematic review. *Clin. Pediatr. Emerg. Med.* (2014) https://doi.org/10.1016/j.cpem.2014.09.004.
31. Schnall, A. *et al.* Community Assessment for Public Health Emergency Response (CASPER): An Innovative Emergency Management Tool in the United States. *Am. J. Public Health* (2017) https://doi.org/10.2105/AJPH.2017.303948.

32. Katona, L. B. *et al.* Wilderness First Aid Training as a Tool for Improving Basic Medical Knowledge in South Sudan. *Prehosp. Disaster Med.* (2015) https://doi.org/10.1017/S1049023X15005270.
33. Tatebe, J. & Mutch, C. Perspectives on education, children and young people in disaster risk reduction. *International Journal of Disaster Risk Reduction* (2015) https://doi.org/10.1016/j.ijdrr.2015.06.011.
34. Ossey, S. *et al.* Community Emergency Response Team (CERT) Training of High-Risk Teens in the Community of Watts, South Los Angeles, 2013-2014. *Disaster Med. Public Health Prep.* (2017) https://doi.org/10.1017/dmp.2016.199.
35. Bromley, E. *et al.* How do communities use a participatory public health approach to build resilience? The Los Angeles county community disaster resilience project. *Int. J. Environ. Res. Public Health* (2017). https://doi.org/10.3390/ijerph14101267.
36. Carter, H., Weston, D., Betts, N., Wilkinson, S. & Amlôt, R. Public perceptions of emergency decontamination: Effects of intervention type and responder management strategy during a focus group study. *PLoS One* (2018) https://doi.org/10.1371/journal.pone.0195922.
37. Harris, C. *et al.* Expanding understanding of response roles: An examination of immediate and first responders in the United States. *Int. J. Environ. Res. Public Health* (2018) https://doi.org/10.3390/ijerph15030534.
38. Ha, K. M. & Oh, H. M. Selective versus comprehensive emergency management in Korea. *Springerplus* (2014) https://doi.org/10.1186/2193-1801-3-602.
39. Tam, G., Huang, Z. & Chan, E. Y. Y. Household preparedness and preferred communication channels in public health emergencies: A cross-sectional survey of residents in an asian developed Urban city. *Int. J. Environ. Res. Public Health* (2018) https://doi.org/10.3390/ijerph15081598.
40. Henly-Shepard, S., Gray, S. A. & Cox, L. J. The use of participatory modeling to promote social learning and facilitate community disaster planning. *Environ. Sci. Policy* (2015) https://doi.org/10.1016/j.envsci.2014.10.004.
41. Williams, M. V. *et al.* Evaluating community partnerships addressing community resilience in Los Angeles, California. *Int. J. Environ. Res. Public Health* (2018) https://doi.org/10.3390/ijerph15040610.
42. Doyle, E. E. H., Paton, D. & Johnston, D. M. Enhancing scientific response in a crisis: Evidence-based approaches from emergency management in New Zealand. *J. Appl. Volcanol.* (2015) https://doi.org/10.1186/s13617-014-0020-8.
43. Djalali, A. *et al.* Identifying deficiencies in national and foreign medical team responses through expert opinion surveys: Implications for education and training. *Prehospital and Disaster Medicine* (2014) https://doi.org/10.1017/S1049023X14000600.
44. Power, N. Extreme teams: Toward a greater understanding of multiagency teamwork during major emergencies and disasters. *Am. Psychol.* (2018) https://doi.org/10.1037/amp0000248.
45. Biswas, A., Rahman, A., Mashreky, S. R., Humaira, T. & Dalal, K. Rescue and emergency management of a man-made disaster: Lesson learnt from a collapse factory building, Bangladesh. *Sci. World J.* (2015) https://doi.org/10.1155/2015/136434.
46. Mishra, J. L., Allen, D. K. & Pearman, A. D. Understanding decision making during emergencies: a key contributor to resilience. *EURO J. Decis. Process.* (2015). https://doi.org/10.1007/s40070-015-0039-z.
47. Debacker, M., Van Utterbeeck, F., Ullrich, C., Dhondt, E. & Hubloue, I. SIMEDIS: a Discrete-Event Simulation Model for Testing Responses to Mass Casualty Incidents. *J. Med. Syst.* (2016) https://doi.org/10.1007/s10916-016-0633-z.
48. Adams, R. M., Eisenman, D. P. & Glik, D. Community advantage and individual self-efficacy promote disaster preparedness: A multilevel model among persons with disabilities. *Int. J. Environ. Res. Public Health* (2019) https://doi.org/10.3390/ijerph16152779.

49. Hunt, M. R., Chung, R., Durocher, E. & Henrys, J. H. Haitian and international responders' and decisionmakers' perspectives regarding disability and the response to the 2010 Haiti earthquake. *Glob. Health Action* (2015) https://doi.org/10.3402/gha.v8.27969.
50. Sharma, R. K. *et al.* Automation of emergency response for petroleum oil storage terminals. *Saf. Sci.* (2015) https://doi.org/10.1016/j.ssci.2014.09.019.
51. Longo, F., Nicoletti, L. & Padovano, A. Emergency preparedness in industrial plants: A forward-looking solution based on industry 4.0 enabling technologies. *Comput. Ind.* (2019) https://doi.org/10.1016/j.compind.2018.12.003.
52. Yang, L., Prasanna, R. & King, M. GDIA: Eliciting information requirements in emergency first response. *Requir. Eng.* (2015) https://doi.org/10.1007/s00766-014-0202-2.
53. Hanson-Easey, S., Every, D., Hansen, A. & Bi, P. Risk communication for new and emerging communities: The contingent role of social capital. *Int. J. Disaster Risk Reduct.* (2018) https://doi.org/10.1016/j.ijdrr.2018.01.012.
54. Bodoque, J. M., Díez-Herrero, A., Amerigo, M., García, J. A. & Olcina, J. Enhancing flash flood risk perception and awareness of mitigation actions through risk communication: A pre-post survey design. *J. Hydrol.* (2019) https://doi.org/10.1016/j.jhydrol.2018.11.007.
55. Al-Dhaqm, A. *et al.* Development and validation of a database forensic metamodel (DBFM). *PLoS One* (2017) https://doi.org/10.1371/journal.pone.0170793.
56. Eisenman, D. *et al.* The Los Angeles county community disaster resilience project - A Community-Level, public health initiative to build community disaster resilience. *Int. J. Environ. Res. Public Health* (2014) https://doi.org/10.3390/ijerph110808475.
57. Shoaf, K. Organizing the health sector for response to disasters. *Cien. Saude Colet.* (2014) https://doi.org/10.1590/1413-81232014199.03722014.
58. Hu, J., Chen, C. & Kuai, T. Improvement of emergency management mechanism of public health crisis in rural china: A review article. *Iranian Journal of Public Health* (2018).
59. Balikuddembe, J. K., Ardalan, A., Khorasani-Zavareh, D., Nejati, A. & Raza, O. Weaknesses and capacities affecting the Prehospital emergency care for victims of road traffic incidents in the greater Kampala metropolitan area: A cross-sectional study. *BMC Emerg. Med.* (2017) https://doi.org/10.1186/s12873-017-0137-2.
60. Lestari, F., Bowolaksono, A., Yuniautami, S., Wulandari, T. R. & Andani, S. Evaluation of the implementation of occupational health, safety, and environment management systems in higher education laboratories. *J. Chem. Heal. Saf.* (2019) https://doi.org/10.1016/j.jchas.2018.12.006.
61. Shaw, M. D. Organizational Change as a Function of Disaster Recovery: Lessons from Gulf Coast Institutions. *Coll. Student Aff. J.* (2016) https://doi.org/10.1353/csj.2016.0019.
62. Villagra, P. & Quintana, C. Disaster governance for community resilience in coastal towns: Chilean case studies. *Int. J. Environ. Res. Public Health* (2017) https://doi.org/10.3390/ijerph14091063.
63. Renne, J. L. Emergency evacuation planning policy for carless and vulnerable populations in the United States and United Kingdom. *Int. J. Disaster Risk Reduct.* **31**, 1254–1261 (2018).
64. Moreno, J., Lara, A. & Torres, M. Community resilience in response to the 2010 tsunami in Chile: The survival of a small-scale fishing community. *International Journal of Disaster Risk Reduction* (2018) https://doi.org/10.1016/j.ijdrr.2018.10.024.
65. Thaler, T. & Seebauer, S. Bottom-up citizen initiatives in natural hazard management: Why they appear and what they can do? *Environ. Sci. Policy* (2019) https://doi.org/10.1016/j.envsci.2018.12.012.
66. Hambridge, N. B., Howitt, A. M. & Giles, D. W. Coordination in crises: Implementation of the national incident management system by surface transportation agencies. *Homel. Secur. Aff.* (2017).

67. Bachmann, D. J., Jamison, N. K., Martin, A., Delgado, J. & Kman, N. E. Emergency preparedness and disaster response: There's an app for that. *Prehospital and Disaster Medicine* (2015) https://doi.org/10.1017/S1049023X15005099.
68. Baseman, J. *et al.* Impact of new technologies on stress, attrition and well-being in emergency call centers: The NextGeneration 9-1-1 study protocol. *BMC Public Health* (2018) https://doi.org/10.1186/s12889-018-5510-x.
69. Meischke, H. *et al.* Protocol: A multi-level intervention program to reduce stress in 9-1-1 telecommunicators. *BMC Public Health* (2018) https://doi.org/10.1186/s12889-018-5471-0.
70. Sabra, J. P. *et al.* Medical support at a large-scale motorsports mass-gathering event: The inaugural formula one united states grand prix in Austin, Texas. *Prehosp. Disaster Med.* (2014) https://doi.org/10.1017/S1049023X14000636.
71. Duan, W. & He, B. Emergency response system for pollution accidents in Chemical Industrial Parks, China. *Int. J. Environ. Res. Public Health* (2015) https://doi.org/10.3390/ijerph120707868.
72. Nedjati, A., Vizvari, B. & Izbirak, G. Post-earthquake response by small UAV helicopters. *Nat. Hazards* (2016) https://doi.org/10.1007/s11069-015-2046-6.
73. Fekete, A., Tzavella, K. & Baumhauer, R. Spatial exposure aspects contributing to vulnerability and resilience assessments of urban critical infrastructure in a flood and blackout context. *Nat. Hazards* (2017) https://doi.org/10.1007/s11069-016-2720-3.
74. Pagano, A., Pluchinotta, I., Giordano, R. & Fratino, U. Integrating "Hard" and "Soft" Infrastructural Resilience Assessment for Water Distribution Systems. *Complexity* (2018) https://doi.org/10.1155/2018/3074791.
75. Ahmed, S., Adams, A. M., Islam, R., Hasan, S. M. & Panciera, R. Impact of traffic variability on geographic accessibility to 24/7 emergency healthcare for the urban poor: A GIS study in Dhaka, Bangladesh. *PLoS One* (2019) https://doi.org/10.1371/journal.pone.0222488.
76. Smith, S. W. *et al.* Prehospital Indicators for Disaster Preparedness and Response: New York City Emergency Medical Services in Hurricane Sandy. *Disaster Med. Public Health Prep.* (2016) https://doi.org/10.1017/dmp.2015.175.
77. Khan, Y. *et al.* Are we prepared? The development of performance indicators for public health emergency preparedness using a modified Delphi approach. *PLoS One* (2019) https://doi.org/10.1371/journal.pone.0226489.
78. Mostafavi, A. & Inman, A. Exploratory analysis of the pathway towards operationalizing resilience in transportation infrastructure management. *Built Environ. Proj. Asset Manag.* (2016) https://doi.org/10.1108/BEPAM-03-2015-0011.
79. Heagele, T. N. Lack of evidence supporting the effectiveness of disaster supply kits. *American Journal of Public Health* (2016) https://doi.org/10.2105/AJPH.2016.303148.
80. Miller, D. M. S. Public trust in the aftermath of natural and na-technological disasters: Hurricane Katrina and the Fukushima Daiichi nuclear incident. *Int. J. Sociol. Soc. Policy* (2016) https://doi.org/10.1108/IJSSP-02-2015-0030.
81. Imperiale, A. J. & Vanclay, F. Command-and-control, emergency powers, and the failure to observe United Nations disaster management principles following the 2009 L'Aquila earthquake. *Int. J. Disaster Risk Reduct.* (2019) https://doi.org/10.1016/j.ijdrr.2019.101099.
82. Shen, W. *et al.* Development of the science of mass casualty incident management: reflection on the medical response to the Wenchuan earthquake and Hangzhou bus fire大规模伤亡事件应对研究范式的发展: 基于汶川地震和杭州公交车起火事件紧急医疗救援的反思. *J. Zhejiang Univ. Sci. B* (2014) https://doi.org/10.1631/jzus.b1400225.
83. Meltzer, M., Ştefănescu, L. & Ozunu, A. Keep them engaged: Romanian county inspectorates for emergency situations' Facebook usage for disaster risk communication and beyond. *Sustain.* (2018) https://doi.org/10.3390/su10051411.
84. Holgersson, A. Review of On-Scene Management of Mass-Casualty Attacks. *J. Hum. Secur.* (2016) https://doi.org/10.12924/johs2016.12010091.

85. Soman, A. R. & Sundararaj, G. Accidental release of chlorine from a storage facility and an on-site emergency mock drill: A case study. *Sci. World J.* (2015) https://doi.org/10.1155/2015/483216.
86. Zhang, Y., Weng, W. G. & Huang, Z. L. A scenario-based model for earthquake emergency management effectiveness evaluation. *Technol. Forecast. Soc. Change* (2018) https://doi.org/10.1016/j.techfore.2017.12.001.
87. Crabtree, C. & Braun, K. PhotoVoice: A Community-Based Participatory Approach in Developing Disaster Reduction Strategies. *Prog. Community Heal. Partnerships Res. Educ. Action* (2015) https://doi.org/10.1353/cpr.2015.0005.
88. Lam, R. P. K. *et al.* Urban disaster preparedness of Hong Kong residents: A territory-wide survey. *Int. J. Disaster Risk Reduct.* (2017) https://doi.org/10.1016/j.ijdrr.2017.04.008.
89. Sharifi, A. *et al.* Conceptualizing dimensions and characteristics of urban resilience: Insights from a co-design process. *Sustain.* (2017) https://doi.org/10.3390/su9061032.
90. Monteith, R. G. & Pearce, L. D. R. Self-care Decontamination within a Chemical Exposure Mass-casualty Incident. *Prehosp. Disaster Med.* (2015) https://doi.org/10.1017/s1049023x15004677.
91. Shannon, C. Understanding community-level disaster and emergency response preparedness. *Disaster Med. Public Health Prep.* (2015) https://doi.org/10.1017/dmp.2015.28.
92. Tam, G., Chan, E. Y. Y. & Liu, S. Planning of a health emergency disaster risk management programme for a chinese ethnic minority community. *Int. J. Environ. Res. Public Health* (2019) https://doi.org/10.3390/ijerph16061046.
93. Fan, Y., French, M. L., Stading, G. L. & Bethke, S. Disaster Response: An Examination of Resource Management in the Early Hours. *J. Appl. Bus. Econ.* (2015).
94. Xu, W. *et al.* Community preparedness for emergency: A cross-sectional survey of residents in Heilongjiang of China. *BMJ Open* (2015) https://doi.org/10.1136/bmjopen-2015-008479.
95. Thew, R. *et al.* No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title. *Metrologia* **53**, 1–116 (2015).
96. Rimstad, R. & Braut, G. S. Literature review on medical incident command. *Prehospital and Disaster Medicine* (2015) https://doi.org/10.1017/S1049023X15000035.
97. Blake, D., Marlowe, J. & Johnston, D. Get prepared: Discourse for the privileged? *Int. J. Disaster Risk Reduct.* (2017) https://doi.org/10.1016/j.ijdrr.2017.09.012.
98. Lawal, O. & Arokoyu, S. B. Modelling social vulnerability in sub-Saharan West Africa using a geographical information system. *Jàmbá J. Disaster Risk Stud.* (2015) https://doi.org/10.4102/jamba.v7i1.155.
99. Li, N., Sun, M., Bi, Z., Su, Z. & Wang, C. A new methodology to support group decision-making for IoT-based emergency response systems. *Inf. Syst. Front.* (2014) https://doi.org/10.1007/s10796-013-9407-z.