Using Mind Mapping Technology for Personal Preparedness Planning

Alexander Chang, Edbert Hsu
Office Of Critical Event Preparedness And Response, Johns Hopkins, Baltimore/MD/United States of America

Study/Objective: Personal preparedness is a cardinal step to a better prepared community. For the purposes of personal preparedness planning mind maps can be strategically implemented in personal preparedness efforts to structure and synthesize key information.
Background: Mind-mapping is a tool, which visually organizes information portraying complex hierarchies and relationships. As applied to personal-preparedness context, mind maps have potential for: 1) structuring existing information framework 2) conveying knowledge to the public in an accessible intuitive format. Demonstrated mastery of personal and family preparedness for disasters and public health emergencies includes certain objectives, all of which may be tracked or maintained through mind mapping technology. Mind-mapping is vastly superior to traditional checklists in its capability to highlight how, when and what needs to be done. Not only can mind maps be constructed with modest effort to visual-spatially represent and organize relevant information and interrelationships but can also serve as a living document.
Methods: A mixed methods approach was adopted. First, competency sets addressing personal preparedness planning were identified through the peer-reviewed literature. Existing checklists from a variety of sources including *ready.gov*, FEMA, the American Red Cross and academic centers were systematically reviewed. Commercially available software, TheBrain v9.0 beta (Los Angeles, CA, 2016), was used to develop a draft personal preparedness template. https://www.thebrain.com/products/thebrain/
Results: Mind maps enable visual-spatial representation of both concrete and abstract elements of personal preparedness planning. The software features an intuitive interface, collapsible windows and hyperlinks as well as embedded notes and collaborative sharing. Each section of a personal preparedness plan developed in this way, can be examined in further detail and in turn should be continually updated and revised.
Conclusion: Mind mapping offers a feasible alternative to traditional modes of information management for disaster preparedness and personal preparedness planning.

Countdown to the Future - The Biggest Threat: Man-Made or Nature-Source Disasters?

Akif M. Donmez
Disaster Medicine Doctorate Programme, Bezmialem Vakif University Institution of Health Sciences, ISTANBUL/Turkey

Study/Objective: These days, the human world copes with global (warming, agricultural drought, armament, displacements, terrorism, etc.) issues. Even if any issue is a regional one, it fastly becomes a global concern and affects the world over. When a problem occurs, not only does it affects the poor, the indigents, but also the wealthiest. Unfortunately, wars cause more deaths, casualties, and orphan populations than earthquakes and hurricanes. In this day and age, on one hand, advanced technologies make life easier for humanity; on the other hand, it leads the human world vulnerable to man-made disasters never-before-seen. The study aims to define the risks for the future and determine solutions for mankind.
Background: An outlook to the world panorama shouts the fact: deaths, victims, casualties, orphans, and narcotic addicts are due to ongoing wars, terrors, conflicts, forcibly displacements, individual and military armaments, drug trafficking, and abortions worldwide. Even worse, the future is pregnant to unprecedented events, and threats maybe caused by state and non-state terror groups and malevolents under favor of easy access to dangerous materials, machines, and applications, and fast transportation of hazardous materials. Also, any country or a group in an army can easily cause big regional or global chaos by using mass destruction weapons.
Methods: We make conferences about disarmament and non-proliferation concerns, prepare statistics, frameworks, and projects to reduce poverty and world hunger; issue prospects for urbanization and prepare plans for refugees; to maintain international peace and security, promote sustainable development, protect human rights, uphold international laws, and deliver humanitarian aid.
Results: We settle shelters for refugees and serve aid programs for the hungry; but is it enough and sufficient for today and future conditions? The problems are growing day by day.
Conclusion: Every human being has the the right to live in security, peace, and dignity, and with security of tenure.

Understanding the Impact of Visual Imagery in Emergency Warning Messages

Vivienne C. Tippett[1], Stacey Pizzino[2], S. Greer[1], D. Dootson[1], A. Mehta[1]
1. Clinical Science, QUT, Brisbane/QLD/Australia
2. Clinical Science, QUT, Brisbane/ACT/Australia

Study/Objective: This study examines how the provision of emergency messaging during flood events is perceived by members of the community; whether it correctly prompts the correct risk assessment; and whether messages prompt the desired behavior. Experimental conditions are applied to determine the correlation between an individual's innate risk tolerance and the perceived risk they associate with a series of flood-related image prompts.
Background: Australia experiences a broad range of natural hazard events annually, which lead to injury, loss of life, and long-term negative impacts on individuals and communities. Estimates of the costs associated with these events have reached $9 billion a year (Deloitte, 2016). Some impacts can be mitigated by optimising emergency instructions during the event (Burns and Slovik, 2012). Our previous work has indicated that the addition of images and maps in warnings improves the

comprehension of these messages. However, there remains a lack of clarity about whether or not images improve risk perception and associated behavioral intention.

Methods: Participants will complete items from the Domain-specific Risk Taking scale to position their personal risk threshold profile. Participants will then be randomly assigned to one of three conditions (emergency messaging with no imagery; emergency message with images that escalate as the message urgency increases; and emergency messaging with a generic, non-escalating image) and have their responses to the message measured using eye tracking software. Finally, participants respond to a short on-line questionnaire about their perceptions and understanding of the behaviors being elicited by the messages.

Results: Our preliminary results indicate that the addition of visual imagery improves risk perception and comprehension of the immediacy of the message. The results from the proposed extension experiments described here will be presented in this presentation.

Conclusion: Grammatical construction, language, imagery, media channel, and length must all be considered as important factors in maximizing messaging for optimal effect.

Outcome Following Cranioplasty, with Bone Flap Stored in Bone Bank or in Abdomen, in Severe Head Injury Patients

Aswathy Indira
Nurse Informatics, Jai Praksh Narayan Apex Trauma Centre, AIIMS, New Delhi/India

Study/Objective: To find the Outcome Following Cranioplasty, with Bone Flap Stored in Bone Bank or in Abdomen, in Severe Head Injury Patients

Background: Following Decompressive Craniectomy (DC), bone flap is usually stored either in abdomen or in the bone bank. Patients who return for cranioplasty following DC are considered to have the best outcome, as it is a cosmetic procedure. However, infection of the bone flap can lead to high morbidity and mortality in this group.

Methods: The study included 190 cases of cranioplasty done between August 2011 and September 2012. All were post-traumatic cases who had undergone decompressive craniectomy for severe head injuries, and had no apparent features of localized or systematic infection. Infection was defined as presence of culture positive collection, or frank pus around the bone flap.

Results: Twenty-six of 190 cases (13.7%) had infection of the bone flap presenting after 1–14 months of cranioplasty requiring its removal. The infection rate in 119 flaps kept in bone bank was 14.3%, and in 54 flaps kept in abdomen was 11.1% (p > 0.5). Two out of 17 (11.7%) cases done with bone cement had infection. There was no significant difference of age, sex, presence of tracheostomy, type of graft used and post-op hospital stay. This compared to patients who had early surgery, multiple surgical procedures, suture line infections and long hospital stay after primary surgery had a significantly higher rate of bone flap infection.

Conclusion: This is the only study of its kind which has assessed the infection rates in different kinds of storage of bone flaps, and it shows that there is no significant increase in infection rate, if bone is stored in bone bank.

Online Disaster Training for Clinicians and Non-clinicians at a Children's Hospital

*Alan L. Nager[1], Solomon M. Behar[1], Bridget M. Berg[2],
Phung K. Pham[1], Jeffrey S. Upperman[2]*
1. Emergency And Transport Medicine, Children's Hospital Los Angeles, Los Angeles/CA/United States of America
2. Pediatric Disaster Training And Resource Center, Children's Hospital Los Angeles, Los Angeles/CA/United States of America

Study/Objective: To examine changes in knowledge acquisition of pediatric disaster preparedness among clinicians and non-clinicians who completed an online training course of 5 modules: planning (M1), triage (M2), age-specific care (M3), disaster management (M4), and emergency code response (M5).

Background: Terrorism and natural disasters have brought disaster preparedness to the forefront in the medical world. Although children are vulnerable victims during disasters, no standardized pediatric disaster preparedness training exists to date for medical and nonmedical hospital personnel.

Methods: An online training course was developed through the hospital's Pediatric Disaster Resource and Training Center. Course data from July 2009 to August 2012 were analyzed through linear growth curve multilevel modeling, with module total score as the outcome (range 0–100 points), attempt as the level 1 variable (participants could repeat the course), role (clinician versus non-clinician) as the level 2 variable, and attempt by role as the cross-level effect.

Results: There were 44,115 module attempts by 5,773 participants (3,686 clinicians, 2,087 non-clinicians) were analyzed. As shown in the results table, intraclass correlations indicated substantial variance in knowledge acquisition. The average module total score upon first attempt across all participants ranged from 60.28 to 80.11, and participants significantly varied in how they initially scored. On average in M1, M2, M3: total scores significantly increased per attempt across all participants (average rate of change ranged from 0.59 to 1.84); clinicians initially had higher total scores than non-clinicians (average difference ranged from 13.25 to 16.24). Cross-level effects were significant in M4 and M5: on average, non-clinicians' total scores significantly increased per attempt by 3.77 in M4 and 6.40 in M5, while clinicians' total scores did not significantly improve from additional attempts.

Conclusion: Medical and nonmedical hospital personnel alike can acquire knowledge of pediatric disaster preparedness. Key content can be reinforced or improved through successive training in the form of an online course.