The Role of Physical Therapists in Natural Disasters: What Can We Learn from the Earthquake in Haiti?

Stephanie A. Nixon, Shaun Cleaver, Marianne Stevens, Julie Hard, Michel D. Landry

INTRODUCTION

On January 12, 2010, the lives of Haitians changed forever when a large 7.0 earthquake struck the Haitian capital, Port-au-Prince—one of the most densely populated cities in the western hemisphere. Haiti is the poorest country in the Americas; unsafe buildings, poor roads, and a grossly inadequate health care system served to amplify the earthquake's catastrophic impact. Reports cite more than 200,000 people dead, 300,000 injured, and almost 600,000 internally displaced.¹

Particularly striking, however, are the implications of this crisis for disability and rehabilitation. It is speculated that the consequences of the Haiti earthquake will far surpass those of the 2004 tsunami in South Asia in terms of disability, because the traumatic nature of the event left vast numbers of people with spinal-cord injuries, amputations, head injuries, and other forms of disablement. Furthermore, disability rates are likely to be worsened by the fragile state of Haiti's rehabilitation system, which has been further compromised by the earthquake.

As a result, many Canadian physical therapists (PTs), physical therapy programmes, and institutions providing rehabilitation services are questioning their roles and asking how they can best contribute to the response. Should organizations send a rehabilitation team? If so, which skills would be most useful on the ground in Haiti?

While increasing numbers of Canadian PTs are becoming involved in global initiatives,^{2,3} research to inform constructive and meaningful international engagement for PTs is limited. In particular, literature on rehabilitation roles in post-disaster settings is scarce and largely

anecdotal.^{4–8} Glaringly absent is a body of research based on physical therapy experiences in previous disaster settings that could inform and direct the current response in Haiti.

We argue that the PT community has a social responsibility to identify and investigate timely, important, and appropriate research questions that will enable us to learn empirical lessons from the experience in Haiti and thereby inform responses to future disasters. If we fail to engage in meaningful research on this phenomenon, we risk repeating past errors of omission, forcing the difficult question, How many disasters must occur before we start figuring out how best to mount PT responses?

BUILDING A RESEARCH AGENDA FOR HAITI

In any health reform, proceeding to implementation without evidence to inform decisions is imprudent. Implementing a humanitarian rehabilitation response in a context where survival for many is in the balance would also benefit from an evidence base. Research is needed to explore the best models for the coordination and structure of rehabilitation responses in a post-disaster setting. The coordinating structure for rehabilitation services in Haiti currently involves an Injury, Disability and Rehabilitation Working Group formed by the two leading disability non-governmental organizations in collaboration with the United Nations Office for the Coordination of Humanitarian Affairs. Evaluation of this coordinating mechanism is critical. In terms of service provision, what are the optimal delivery mechanisms, and what is the optimal timing of these initiatives? Is there a role for PTs to be embedded within medical crisis

The authors have no conflicts of interest to declare.

Stephanie A. Nixon, PT, PhD: Assistant Professor, Department of Physical Therapy, Graduate Department of Rehabilitation Science, and Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario; Academic Director, International Centre for Disability and Rehabilitation; Research Associate, Health Economics and HIV/AIDS Research Division (HEARD), University of KwaZulu-Natal, South Africa.

Shaun Cleaver, PT, MSc: Physiotherapist, Hôpital Albert Schweitzer, Deschâpelles, Haiti.

Marianne Stevens, PT, MSc: PhD student, Graduate Department of Rehabilitation Sciences, University of Toronto, Toronto, Ontario; Research Representative, International Health Division, Canadian Physiotherapy Association.

Julie Hard, PT, MSc: Chair, International Health Division, Canadian Physiotherapy Association; physiotherapist, St. Michael's Hospital, Toronto, Ontario; physiotherapist, cbm Canada rehabilitation response team, Haiti.

Michel D. Landry, PT, PhD: Assistant Professor, Department of Physical Therapy and Graduate Department of Rehabilitation Science, University of Toronto, Toronto, Ontario; Adjunct Scientist, Toronto Rehabilitation Institute, Toronto, Ontario; Adjunct Assistant Professor, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, North Carolina, USA.

Address correspondence to *Stephanie Nixon*, Department of Physical Therapy, Faculty of Medicine, University of Toronto, 160–500 University Avenue, Toronto, ON M5G 1V7 Canada; Tel.: 416-946-3232; Fax: 416-946-8562; E-mail: stephanie.nixon@utoronto.ca.

intervention teams like Canada's Disaster Aid Response Teams (DART)?

PTs interested in responding on the ground in Haiti are encouraged to apply through non-governmental organizations such as Handicap International or CBM International. There may be value in investigating the feasibility of this gatekeeper recruitment model for a disaster of this scope, where the influx of interested providers is enormous and challenging for these agencies to manage.

Given that rehabilitation in Haiti was vastly underdeveloped before the earthquake, an important potential long-term outcome of the post-disaster response is a rejuvenated rehabilitation system within the country. For this reason, the role of health service researchers, and others who could contribute to developing a research agenda to iteratively support this evolution, is paramount.

At the clinical level, the most fundamental research questions involve patient outcomes with or without rehabilitation and the "value added" of engagement with physical therapy at particular times across the continuum of care. For instance, rates of amputation among hospital in-patients are high. For below-knee amputations, we may expect rates of flexion contractures to be almost as high in the absence of interventions to ensure full extension, which is a requirement for use of a prosthetic limb.

Further avenues of inquiry involve how best to provide low-tech rehabilitation solutions to trauma patients in resource-poor environments. Consider, for example, the role of the PT in addressing the waves of people with spinal-cord injury in this environment where surgical stabilization techniques are almost nonexistent. We are not advocating that this research be undertaken during the immediate post-disaster phase; however, we envision a role later in the process for clinical research that focuses on best practices for trauma interventions in resource-poor settings. Additional questions could focus on ideal skill sets (clinical and otherwise) for clinicians who provide PT at different stages in the response; the utility (or not) of short-term clinical missions; and the ethical concerns that arise in these instances. Our colleagues on the ground in Haiti note daily ethical struggles in their attempts to strike the impossible balance between the limited time of vastly understaffed rehabilitation providers and the enormous and ever-growing demand for rehabilitation services, which can affect not only disablement but mortality. This is just one example of rehabilitation ethics questions demanding research attention.

CONCLUSION

On January 12, 2010, and in the weeks that followed, Haiti received extraordinary media attention. Individuals, corporations, and governments opened their hearts and their wallets in a rush to respond—until exactly 1 month later, when the world's attention turned to the Winter Olympics in Vancouver and stories about Haiti began to fade from the front page. This observation is not a condemnation of the short shelf life of our collective empathy; rather, it is a stark reminder that the window during which the world focuses on such disasters is short. We need to be ready to articulate with clarity, and from a solid evidence base, how best to direct the resources that present themselves so fleetingly in the acute post-disaster phase of the next big one.

Furthermore, we may well look back at the Haiti earthquake as a seminal event in the history of the field of rehabilitation in natural disasters. We believe that it is imperative for the physical therapy field first to respond to the immediate needs of Haitians but, second, to engage in appropriate research that will yield evidence to inform our response to the next disaster. To overlook this imperative would be to abdicate our responsibilities as PTs, Canadians, and global citizens.

REFERENCES

1. ReliefWeb, United Nations Office for the Coordination of Humanitarian Affairs. Haiti earthquake situation report #23 [Internet]. 2010 Feb 22 [cited 2010 Feb 23]. Available from: [http://www.reliefweb.int/rw/RWFiles2010.nsf/FilesByRWDUnidFilename/MYAI-82X8LA-full_report.pdf/\\$File/full_report.pdf](http://www.reliefweb.int/rw/RWFiles2010.nsf/FilesByRWDUnidFilename/MYAI-82X8LA-full_report.pdf/$File/full_report.pdf)
2. Allapat C, McFarland J, McGovern B, Penfold A, Siu G, Raman S, et al. The role of physical therapists in global health initiatives: a SWOT analysis. *Physiother Can.* 2007;59:275–85. doi:10.3138/ptc.59.4.272
3. Crawford E, Biggar JM, Leggett A, Huang A, Mori B, Nixon SA, Landry MD. Examining international clinical internships for Canadian physical therapy students from 1997 to 2007. *Physiother Can.* 2010;62:261–73. doi:10.3138/ptc.62.3.261
4. Harrison RM. Preliminary investigation into the role of physiotherapist in disaster response. *Prehosp Disaster Med.* 2007;22:462–5.
5. Raissi GR. Earthquakes and rehabilitation needs: experiences from Bam, Iran. *J Spinal Cord Med.* 2007;30:369–72.
6. Rathore FA, Farooq F, Muzammil S, New PW, Ahmad N, Haig AJ. Spinal cord injury management and rehabilitation: highlights and shortcomings from the 2005 earthquake in Pakistan. *Arch Phys Med Rehabil.* 2008;89:579–85. doi:10.1016/j.apmr.2007.09.027
7. US Public Health Service Office of Emergency Readiness, Office of Force Readiness and Deployment (OFRD). A guide for the deployment of therapist officers [Internet]. Washington, DC: US Public Health Service, Therapist Professional Advisory Committee; 2004 [cited 2010 Feb 20]. Available from: <http://www.cc.nih.gov/rm/pt/handbook.pdf>.
8. World Confederation for Physical Therapy. Position statement: disaster management [Internet]. 2007 [cited 2010 Feb 20]. Available from: <http://www.wcpt.org/node/29488>.