AGENDA ITEM 9

CONSIDERATION OF APPOINTING DISASTER PREPAREDNESS/ DISASTER RESPONSE AD HOC COMMITTEE

American Occupational Therapy Association

Earn .1 AOTA CEU
(one contact hour and 1.25 NBCOT PDU).
See page CE-6 for details.

CONTINUING EDUCATION ARTICLE

Occupational Therapy's Role in Times of Disaster: Addressing Periods of Occupational Disruption

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This article was written as part of **AOTA's efforts to develop resources for practitioners, educators, and students to navigate COVID-19.**

ABSTRACT

The occupational therapy profession was founded as a response to events that led to the occupational disruption in the lives of people, groups, and populations. In today's COVID-19 outbreak, occupational therapy practitioners can again see their role as essential personnel. The aim of this article is to illustrate the role of occupational therapy during times of disaster that result in occupational disruption, using two case examples to present and explore evaluation of and intervention for individuals and groups.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. Identify occupational therapy's essential role in times of disaster (e.g., a pandemic or other national emergency)
2. Describe interventions that promote occupational well-being through the use of occupation
3. Synthesize information and use clinical reasoning to facilitate evaluating, analyzing, and providing occupation-based interventions to address performance patterns in times of occupational disruption
4. Interpret assessment findings of occupational performance and participation deficits to enable development of evidence- and occupation-based intervention plans

ESSENTIAL PERSONNEL

No part of the country is immune from disaster—whether it's hurricanes in the Southeast, earthquakes in the West, tornadoes in the Central plains, flooding in the Midwest, or blizzards in the North. Disasters take many forms, including pandemics like the current novel coronavirus (COVID-19) global pandemic. During a disaster, a major part of the response is helping people regain control when facing an uncontrollable event. When everything is chaotic, being able to function in a productive and meaningful manner helps bring normalcy back. Whether it is fixing dinner, making lunches and other meals, or planting a garden, everyday acts empower disaster victims to take control and re-engage in their occupation of daily living.

For more than a century, occupational therapy practitioners have been called on as part of the essential workforce during times of global disasters. When disaster occurs, people are unable to perform normal activities; thus, they experience occupational disruption. Occupational therapy practitioners play an important part in developing solutions to a disaster's disabling effects (AOTA, 2017b).

There are four ways of conceptualizing occupations: those that are necessary (e.g., eating, sleeping, grooming), contracted (e.g., paid work or education), committed (e.g., household work), and part of free time (i.e., leisure). Each type of occupation can be disrupted in times of chaos, like we are experiencing as a result of COVID-19.

During the height of this latest emergency, people have reported, among other things, sleep disruption and difficulty engaging in occupations associated with food acquisition (e.g., closed restaurants and grocery stores with limited access or stock). Workers have been displaced, with many working from home or having to work in new, often more restricted, conditions. Many licensed health care providers in administrator roles have been called back into direct patient care. Many people have lost work, and as a result are experiencing grave financial uncertainty.

Daily committed occupations are strained: Meal preparation is a challenge when one cannot just "run to the store" for ingredients, and it may require balancing the time commitment of multiple daily meal preparations with child care and/or at-home work responsibilities. Free-time activities are interrupted with social distancing.

Occupational disruption refers to times when there is a temporary disturbance to a person's usual pattern of occupational performance and occupational engagement (American Occupational Therapy Association [AOTA], 2014). When people aren't able to do what they want and need to do, it can negatively affect their health and well-being (Nizzero et al., 2017). The World Federation of Occupational Therapists (WFOT; 2020) reminds the global community of practitioners that our profession works with people to develop strategies to facilitate continued access to their occupations.

OCCUPATIONAL THERAPY'S ROLE IN PREPAREDNESS

"If you work in a critical infrastructure industry, as defined by the Department of Homeland Security, such as health care services and pharmaceutical and food supply, you have a special responsibility to maintain your normal work schedule" (Krebs, 2020, p. 1).

Why are occupational therapy practitioners essential? Practitioners are prepared with the skills and abilities to provide training in essential employee functions. Training includes, but is not limited to, competency with universal precautions, Health Insurance Portability and Accountability Act compliance, universal design, wound care, and basic first aid. All occupational therapy practitioners have advanced competency in ensuring medication management, functional mobility, personal hygiene, and safety protocols across multiple environments and contexts. All occupational therapists have competency in assessing and treating mental functions, sensory and emotional regulation, sensory function (e.g., visual, auditory, kinesthetic), communication, movement, and function.

Occupational therapy is client centered and provides culturally competent care for the community of which a client is a member. Occupational therapy practitioners are qualified to address the needs of diverse populations to mitigate occupational risk and lack of well-being by uniquely recognizing the influence of the cultural context on the client's identity and activity choices (AOTA, 2014).

Additionally, occupational therapy practitioners are well prepared to ensure the health and well-being of vulnerable populations, such as adolescents in transition, students or workers with disabilities or chronic disabling conditions, and individuals in the LGBTQ+ and other minory or underserved communities. These individuals require the attention to social and occupational justice and cultural sensitivity/competence that falls within occupational therapy's scope of practice as part of the primary health care team. Protecting vulnerable populations and bringing attention to justice for *all* recipients of occupational therapy services becomes even more critical during times of disaster, such as a global pandemic, ranging from the most basic concerns (meal preparation and food acquisition, ADLs, and loneliness for elders and others in isolation) to educational concerns (meeting the needs of students with disabilities who are not able to access accommodations) to the mental health of a population (policies that support or fail to include the voices of those with disabilities).

Occupational therapy practitioners are well trained and have essential skills to work on the front lines during times of emergency and disaster. On March 19, 2020, occupational therapist (OT) Victoria Pruess, in response to people asking why she was going to work despite governmental mandates closing businesses and implementing increasingly stringent guidelines about personal contact with others, wrote on Facebook:

> We are a part of the care team all throughout the hospital …. Just because COVID-19 hit doesn't mean others stop being sick. People will continue to have strokes, heart attacks, break bones—you name it. [And] we will be critical to ensuring that patients with COVID-19 can actually get out of bed and resume a normal life after deconditioning and prolonged hospitalizations for some. This can mean we are within inches of contact with people who are sick. In this ever changing climate, our work gives patients hope that they may be able to return to a normal life outside of the hospital …. As challenging and unsettling as this week has been, we will continue to show up and be there on the front lines.

Addressing Periods of Occupational Disruption

Considering the essential contribution of occupational therapy across individuals, groups, and populations is a critical exercise. The clients of occupational therapy are typically classified as "persons (including those involved in care of a client), groups (collectives of individuals, e.g., families, workers, students, communities), and populations (collectives of groups of individuals living in a similar locale—e.g., city, state, or country—or sharing the same or like characteristics or concerns)" (AOTA, 2014, p. S3).

Occupational therapy practitioners can take an overarching ecological approach to consider occupational disruption, considering the interrelatedness of the person, the environment, and the occupations individuals want and need to engage in (Hinojosa et al., 2017). Our clinical hypothesis is that occupational disruption creates disease while the normalization of day-to-day engagement in habits, routines, roles, and rituals promotes and restores health and well-being (Cronin & Graebe, 2018). The Cognitive Orientation to daily Occupational Performance (CO-OP) approach is an evidence-based approach to enabling performance that uses collaborative goal setting to achieve client-centered goals (Polatajko & Mandich, 2004).

By exploring habits, routines, roles, and rituals, an effort is made to maintain normalcy. Normalizing in a time of disruption can boost the efficacy of interventions and supports the clinical hypothesis focused on well-being. The CO-OP approach is especially effective during times of disaster, when clinicians are

managing increased stressors on clients and asking, "What is disrupted in your life" and then "What would be a solution for that?"

The CO-OP approach asks the client to reflect on "what routines do you have?" and "where are the areas of disruption, and what would adaptation look like in your eyes?" The therapist and client work together to literally or figuratively co-create a workable on-ramp to function across the various environments and contexts of the client's life. All this is then used by the OT to develop a plan for intervention.

The following two case examples explore how occupational therapy practitioners are providing essential services during the COVID-19 pandemic. The first example focuses on an individual client, Jack, seen in a medical setting. The second example considers a group intervention model with Sarah and her family, treated through a telehealth practice model. Both illustrate the essential role of occupational therapy practitioners during times of occupational disruption.

Case Example 1: Traditional Hospital Setting During COVID-19 Pandemic

The recent novel coronavirus has forced the medical community to reevaluate treatment of patients because of changes in social contexts that now contain pressures and stressors not typical of health care services. Hospitals, nursing homes, and medical services must continue to operate as illness and accidents continue to occur. Occupational therapy practitioners return to work each day with their skills and expertise to address occupational function disruption in the midst of regional and/or global crises.

What additional factors should be considered when developing treatment plans for clients who are dealing with physical disability during a global crisis?

Jack was a 76-year-old white male who fell at home and was admitted to the hospital through the Emergency Department 10 days previously. X-rays confirmed a substantial right femoral neck fracture requiring a total hip replacement. He was currently on 50% weight bearing status, had total hip precautions, and used supplemental O2 via nasal cannula. He required moderate assistance for toilet and chair functional transfers. Bed transfer status was maximum assistance. Upper body dressing status was supervision, and lower body dressing status was dependent and required the use of adaptive tools.

Since the loss of his wife 9 months earlier, Jack had lived with his daughter, Diana, and her three children (one in middle school, two in high school) in a small, multi-story home with a recently added in-law suite on the first floor. He had had declining health over the prior few years because of complications from more than 50 years of smoking two to three packs of cigarettes a day, as well as an increasingly sedentary lifestyle. Jack's decline in function seemed to be exacerbated by the loss of his wife.

Prior to his fall (and the local emergence of the novel coronavirus), Jack had spent most mornings at the local McDonald's with his friends drinking coffee. Afterward, he would drive himself home to watch TV, often snoozing in his recliner until the kids returned home from school. At the dining room table, the grandchildren would do homework and Jack would play his "paper games" (crosswords, word searches) until dinnertime, prepared by Diana. He was less interested in the smartphone he had received as a present and often didn't turn it on to "save the battery." Other community outings included weekly religious participation.

Jack's prioritized occupational therapy goals were related to ADLs, IADLs, functional mobility, and habituation of energy conservation/work simplification. Typically, an acute care OT would see Jack in the therapy clinic or life skills apartment, where simulated life tasks and both ADL and IADL skill re-attainment would be addressed given his new restrictions of total hip prosthesis, weight bearing status, and need for oxygen.

The need to deliver traditional occupational therapy intervention during a global pandemic has additional restrictions that changed the context of service delivery that Jack's OT needed to consider. All rehabilitative treatment during the time Jack was in the hospital needed to be delivered in his room. Anyone entering his room wore personal protective equipment: Gowns, masks with face shields, gloves, and shoe covers. Equipment needed to be wiped down with antiviral wipes before and after all interventions. There were no visitors allowed at any time in the hospital.

At the second weekly case conference, the team was concerned that Jack was not making functional improvement in his ADLs/IADLs and functional mobility. The OT considered the CO-OP theory to assess Jack's most meaningful occupations, mental health, and any influence of possible altered cognition. They completed a Canadian Occupational Performance Measure (Law et al. 1990), Beck Depression Inventory (Beck et al., 1961), and Global Deterioration Scale (Reisberg et al., 1982) to best assess any barriers to occupational improvement.

After assessment and consultation with Jack, the OT determined that the current global health crisis was inciting some post-traumatic stress symptoms in Jack stemming from his military service during the Vietnam War, as a result of seeing the hospital staff in what he calls "hazmat" suits. He also identified deep feelings of loneliness because of his wife's recent passing and continuous isolation during his hospital stay.

Considerations for Jack's occupational therapy interventions during the COVID-19 pandemic: Beyond just treating Jack's primary condition (i.e., hip fracture), his OT realized he needed a holistic approach; while Jack's body was injured, his spirit was wounded as well. The OT recommended the treatment team consult the psychology team to address any post-traumatic symptomology. The OT then adjusted interventions, to not only perform traditional ADL/IADL training but also address the barriers of fear and isolation identified by Jack and to administer the standardized assessments, which ruled out possible dementia.

Step-by-step tutorials and written directions on how to activate Siri from an iPhone to initiate a FaceTime call to family members (and coffee buddies!) was incorporated during standing tolerance activities because the no visitors policy due to COVID-19 meant family time had to be virtual.

Participation in a hallway bingo leisure activity with other orthopedic clients addressed sit-to-stand transfer training goals while maintaining the recommended social distancing between clients. Virtual technology (Amazon's Echo Show) was used to communicate with family members and evaluate Jack's home set-up and options for durable medical equipment. The therapist and Jack explored YouTube for Catholic Mass online—an avenue he had not thought of, and that would allow him to meet his religious participation needs safely. Jack and the OT practiced using Echo Show to reach out and help Jack's grandson with his homework. Last, the family dropped off Jack's Keurig coffee maker and some coffee pods for him to make his own each morning during occupational therapy in an attempt to re-create his McDonald's routine with "the boys," whom he would FaceTime with afterward.

Additionally, the OT provided Jack with a handout developed by Peter Axelson, MSME, ATP, RET, titled *Attention: Wheelchair and Assistive Technology Users: Precautions for COVID-19*, which explains the particular needs of wheelchair users for cleanliness of hands and equipment, and social distancing during the COVID-19 pandemic (https://bit.ly/34kjkPd).

During 2 additional weeks on the Step-down Rehab Unit, Jack made significant progress toward independence, with his occupational goals related to having his hip replaced. Self-care was now Modified Independent, IADLs were Minimal Assistance, and functional mobility within the home was Supervision. Jack's mood improved and he reported that he even helped his youngest grandchild make a short video for the TikTok app. The two of them worked side by side (Echo Show to Echo Show) while the grandson created the TikTok. Jack confessed he did not know what a TikTok was, but it brought him joy to watch his grandchild create it and then share the final video with him. He also reported attending weekly mass on his iPhone.

Additional solutions to incorporate into client treatment: Jack had the help of his inpatient OT to quickly identify some additional barriers to the more traditional intervention aimed at his primary reason to receive rehabilitation services—total hip replacement. However, if the therapist did not address some contextual barriers, true client-centered care would not have occurred. It is important to routinely consider any additional factors present in the clients who are the recipients of our services during times of disaster, or for anyone experiencing occupational disruption because of COVID-19.

Adults will want to prepare/be prepared: There are many services available to help reduce the need for entering public spaces once home from hospitalization or during times of stress. Occupational therapy practitioners can help clients download apps or phone numbers for prescription delivery, curbside grocery pickup, and more. They might also consider helping clients import phone contacts to Alexa/Siri or set up Skype or other video-chatting applications to facilitate social interaction and reduce loneliness. Using mindfulness applications like the Calm app can also help address stress and difficulties sleeping. Additionally, gardening, updating photo albums, and similar activities are healthy routines that can reduce stress when clients can't leave the house.

Case Example 2: Occupational Role Strain/Role Conflict of the Adult Parent/Worker During the COVID-19 pandemic

The following case example profiles the life of Sarah, a mother of two, who was a senior partner at her law firm and whose spouse frequently travelled internationally away from the family for up to 2 weeks every month. Because of the COVID-19 outbreak, schools were closed and the children were at home, receiving their education through materials from their teachers each Sunday night. Some days they were online (through Zoom) and some days they were working on their assignments independently. Sarah's spouse was stranded oversees as a result of a national lockdown and cancelled flights.

Sarah's office had issued a "stay at home" mandate, and Sarah was working from home as well as managing all areas of family occupations. She was well organized and socially active, and used to being a high-performer, but the occupational disruption to her roles of parent, wife, worker, and friend were creating significant stress in her life. The following case example outlines the role of occupational therapy in helping Sarah reduce occupational disruption and improve her health, well-being, and participation.

Client Report: Reason the Client is Seeking Services

Sarah's oldest child, Sean, age 12 years, had been seen in an occupational therapy clinic for attention deficit hyperactivity disorder and anxiety 2 years previously, where he learned strategies for self-regulation. He benefited from structure in the classroom and at home. During his treatment, Sarah participated in the parent education group at the clinic. Her family had established routines that supported Sean's academic and social success. Sarah's second child, Sophi, 7 years old, was quiet and calm, in contrast to Sean's high-energy personality.

Remembering the parent education workshops and parent consultations she had benefited from while Sean was receiving services, Sarah reached out to the OT who formerly worked with Sean to ask for advice. Sarah shared her concerns now that both kids were at home after their schools closed as a COVID-19 precaution, and she faced great challenges in organizing Sean's academic needs while she was working from home and her spouse was absent, while handling all the other aspects of day-to-day home life.

She reported:

> My house is a total mess. I have a sink FULL of dishes five times a day; laundry is piled up on the floor (who lives here?); and I have to work and keep the kids fed, entertained, and on track with their schools. The teachers are sending home 6 hours of work each day but none of the other parts of school, the parts that feed my children's love of learning. I'm a terrible parent—yesterday the kids zombied in front of Disney movies for hours. We had

popcorn and popsicles for dinner. After I put the kids to bed (no stories), I ate a bag of vanilla Oreos and drank two glasses of Prosecco while I worked on a client brief. I'm exhausted, my back hurts, I have a chronic headache—I'm not sure this is sustainable and I know I have to change, but I'm feeling really scared.

Sarah believed she and her family had achieved a good routine with school and home life after her earlier work with the OT. She noted that the disruption during this COVID-19 pandemic had left her feeling stressed, overwhelmed, and hopeless in her role of parent and caregiver. Although her spouse was providing moral support to her over the phone and talking often with the kids, his lack of physical presence during the lockdown left her handling all the homemaking duties, as well as continuing to need to manage her considerable work requirements.

One of the first questions addressed in the occupational profile concerns the client's values and interests (AOTA, 2017a). Sarah was highly sought out for her 15-year expertise in tax law. She was an active member of the parent-teacher association at both of the children's schools, taking leadership roles in the fundraising events at the middle school, bringing snacks to the sporting events, and volunteering in her daughter's classroom. She enjoyed her work, participated in a monthly book club, attended girls' night out monthly, and liked to read. She was highly organized, setting and updating the family's schedule on the refrigerator for 3 months out. She was proficient with technology and enjoyed learning how to use new programs, apps, and devices.

But conflict and strain with her primary roles (worker and parent) had overburdened Sarah's established routines, compounded by her worry about the dangers of the virus. In quarantine, she found herself unable to engage in her usual social–restorative activities.

Intervention

Jennifer, the OT, offered several services available through the clinic remotely. Sarah enrolled in a webinar series (three 1-hour classes) and a parenting group workshop (six sessions). As part of the clinic's services, families can participate in the webinar series (developed by the OT) and weekly Zoom parenting support groups. Sarah signed up for both as well as for four individual sessions (one each week) with the therapist. The OT explained she would be using a CO-OP, client-centered approach that employed collaborative goal setting to create solutions to performance problems. In addition to the CO-OP, the OT completed the following assessments for each group member: A self-care assessment worksheet (Brown University, n.d.), the Time Study (White et al., 2007), and the Parenting Stress Index-4 (Abidin, 2012).

The following goals were established for Sarah:

1. Establish habits and routines that provide structure for family life and promote mental and physical health for the family
2. Reorganize the environment to promote participation in meaningful occupations for family members given their distinct roles
3. Create daily self-care rituals that contribute to Sarah's identity (primary roles) and reinforce her values and beliefs within those occupational roles

During the initial CO-OP interview, Jennifer and Sarah discussed current habits and routines that were useful, promoting health and supporting occupational performance, and determined Sarah would benefit from enrolling in the webinars.

Sarah participated in the first webinar the next day. Jackie, an occupational therapy assistant, explained to participants, "You are each being asked to simultaneously move everything online for work and for home; you have to know your limits." She impressed on the parents the importance of giving themselves and their children permission to prioritize and reminded them of the importance of organization. She defined *role strain* as when too many demands are made on one's occupational role (e.g., mother, worker, spouse) and *role conflict* as when two occupational roles have competing (and sometimes irreconcilable) demands on one's time.

Jackie introduced the group to the collaborative project–planning app Padlet, which Sarah found immediately helpful. Listening and participating in the discussion portion of the webinar, Sarah gained comfort hearing that she was not the only person coping with stress resulting from role conflict and role strain, and that these were exacerbated by occupational deprivation during these unprecedented circumstances.

Following her participation in the webinar, during a remote session Sarah and the OT created new schedules for the family. Sarah worked with her children to create fun "breaks" every 20 minutes, using a 20-minute on task/10-minute rest routine. The children returned to their normal morning ADL routine (wake up, eat breakfast, dress, pack lunches, go to "school") to restore a sense of balance to their day. Sarah created "busy boxes" for both children, collecting toys from around the house (Legos for Sean, puzzles for Sophi, etc.). Afterschool snacks and dinner ideas were planned for the week. Recess and outdoor play were added to the schedule. Wednesday dinners became indoor picnics and movie night (popcorn and popsicles became a beloved ritual).

Sarah's spouse scheduled weekly curbside grocery pick up at the local store and used Zoom to participate with the kids in a twice-weekly Game Night and daily homework helper time. Each family member was also assigned daily 1-minute chores (Whitney & Gibbs, 2013).

As part of helping Sarah with her self-care, the OT asked Sarah to take her on a virtual tour of the office space. The OT identified several ergonomic changes to improve seated posture and workspace biomechanics. Sarah switched chairs immediately and used a toy bench to create a standing workstation. She added a plant to the corner and re-purposed a lamp from the basement. This reduced neck and back strain and her headache went away. She rearranged the home environment to create a private workspace for herself, including an "In" and "Out" sign to signal her availability. She downloaded a white noise app for when she was "in" the office.

Using the Padlet app, she and her friends collaborated on a list to post alongside the "In" sign with "Things to do while waiting" at their respective homes, setting up a small desk, chairs,

crayons, an iPad loaded with virtual tours (zoos, museums, celebrities reading books, etc.), and small toys. After all these things had been put in place, Sarah often left her office to find one of her children happily working away and waiting for her to get off work.

Sarah brainstormed with Jennifer about ways to stay socially engaged while physically distanced from her network. She created weekly virtual happy hours while her children were Zooming with their dad. She hosted virtual events for colleagues, friends, and family. And she began to write each day for 5 minutes, using the Gratitude Journal she'd received for her birthday 2 years earlier but had never opened.

Outcome: After four sessions, Sarah felt she had accomplished her goals and agreed she was ready to discharge herself from therapy. She wrote a thank you note to Jennifer and Jackie, stating, "You took care of my heart and the heart of my family during a very difficult time in our lives. Although it's not clear when this will be over or what life will look like, I have better tools in my toolkit now to cope with what comes our way. Thank you." When Sean had graduated from OT 2 years ago, he got to pick a toy from the toy store. When he reminded Sarah of this ritual, she agreed to celebrate her own "graduation" with a movie night and, you guessed it, extra popsicles.

Conclusion

We've presented two case examples, but there are of course many other examples of occupational therapy's role in times of disaster and major occupational disruption. It's a fair point that the cases presented are somewhat "idealized" (both clients had access to good resources and family support, and they lived in a safe environment). The role of occupational therapy expands through concentric circles from the individual to the group, to populations. Additional considerations might include caring for the caretaker and managing disruption in academia or establishing policies that assure the needs of the most vulnerable populations. The current concerns around the COVID-19 pandemic have presented an opportunity for practitioners to step forward into a consultant role within their work organizations or their communities. It is an opening for occupational therapy professionals to be loud about our distinct value in the disaster preparedness context. As generalists, we are problem solvers for our clients.

Occupational therapy practitioners have risen to the challenge of the global pandemic of COVID-19, demonstrating that we are essential personnel with distinct skills in helping people address needs related to occupations during disaster.

How to Apply for Continuing Education Credit

A. To get pricing information and to register to take the exam online for the article **Occupational Therapy's Role in Times of Disaster: Addressing Periods of Occupational Disruption,** go to http://store.aota.org, or call toll-free 800-729-2682.

B. Once registered and payment received, you will receive instant email confirmation.

C. Answer the questions to the final exam found on pages CE-7 & CE-8 by **May 31, 2022**

D. On successful completion of the exam (a score of 75% or more), you will immediately receive your printable certificate.

REFERENCES

Abidin, R. R. (2012). *Parenting Stress Index* (4th ed.). Lutz, FL: Psychological Assessment Resources.

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1), S1–S48. https://doi.org/10.5014/ajot.2014.682006

American Occupational Therapy Association. (2017a). AOTA occupational profile template. *American Journal of Occupational Therapy, 71*(Suppl. 2), 7112420030. https://doi.org/10.5014/ajot.2017.716S12

American Occupational Therapy Association. (2017b). AOTA's societal statement on disaster response and risk reduction. *American Journal of Occupational Therapy, 71*, 7112410060. https://doi.org/10.5014/ajot.2017.716S11

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry,* 4, 561–571.

Brown University. (n.d.). Self-Care Assessment Worksheet. Retrieved from https://www.brown.edu/campus-life/health/services/promotion/sites/health-promo/files/self%20care%20assessment%20and%20planning.pdf

Cronin, A., & Graebe, G. (2018). *Clinical reasoning in occupational therapy*. Bethesda, MD: AOTA Press.

Hinojosa, J., Kramer, P., & Royeen, C. (2017). *Perspectives of human occupation: Theories underlying practice* (2nd ed.). Philadelphia: F. A. Davis.

Krebs, C. (2020). *Memorandum on identification of essential critical infrastructure workers during COVID-19 response*. Retrieved from https://www.cisa.gov/sites/default/files/publications/CISA-Guidance-on-Essential-Critical-Infrastructure-Workers-1-20-508c.pdf?fbclid=IwAR1nrXpoPEIg40jdn4UH-k_TTeZK8-SAP4SyDtWc85xnicLOTjz1tN6O-4E

Law, M., Baptiste, S., Carswell, A., McColl, M., Polatajko, H. & Pollock, N. (2019). *Canadian Occupational Performance Measure, 5th edition revised*. Altona, Man. COPM Inc.

Nizzero, A., Cote, P., & Cramm, H. (2017). Occupational disruption: A scoping review. *Journal of Occupational Science, 24*, 114–127. https://doi.org/10.1080/14427591.2017.1306791

Polatajko, H. J., & Mandich, A. (2004). *Enabling occupation in children: The Cognitive Orientation to daily Occupational Performance (CO-OP) approach*. Ottawa, ON: CAOT Publications ACE.

Reisberg, B., Ferris, S. H., de Leon, M. J., & Crook, T. (1982). The Global Deterioration Scale for assessment of primary degenerative dementia. *American Journal of Psychiatry, 139*, 1136–1139. https://doi.org/10.1176/ajp.139.9.1136

White, S., Meade, S. A., & Hadar, L. (2007). OT cognitive adaptation: An intervention in time management for persons with co-occurring conditions. *OT Practice, 12*(11), 9–14.

Whitney, R. V., & Gibbs, V. D. (2013). Raising kids with sensory processing disorders: A week by week guide to solving everyday sensory issues. Waco, TX: Prufrock Press.

World Federation of Occupational Therapists. (2020). *Public statement—OT response to the COVID-19 pandemic*. Retrieved from https://www.wfot.org/about/public-statement-occupational-therapy-response-to-the-covid-19-pandemic

Earn .1 AOTA CEU (one contact hour and 1.25 NBCOT PDU). See page CE-6 for details.

Final Exam

Article Code CEA0520

Occupational Therapy's Role in Times of Disaster: Addressing Periods of Occupational Disruption

To receive CE credit, exam must be completed by May 31, 2022

Learning Level: Intermediate

Target Audience: Occupational Therapy Practitioners

Content Focus: Domain: Occupations; OT Process: Intervention

1. Which term describes a drastic alteration of habits, routines, and rituals as a result of a significant external force?

- A. Occupational adaptation
- B. Occupational disruption
- C. Occupational cohesion
- D. Occupational deprivation

2. Essential personnel are employees who are called on to report to work in times of declared disasters.. Both occupational therapists and occupational therapy assistants qualify as essential personnel for many reasons, including:

- A. Occupational therapists are minimally trained at the master's level.
- B. Occupational therapy practitioners are licensed in all 50 states.
- C. Occupational therapy practitioners can administer assessments and design treatment interventions without supervision.
- D. As health care professionals, occupational therapy practitioners are trained in wound care, basic first aid, and safety protocols.

3. Why was Jack in need of occupational therapy services?

- A. His wife had recently passed away.
- B. He had fallen at home, resulting in a femoral neck fracture.
- C. He lived alone in a multi-story home.
- D. He had posttraumatic stress disorder.

4. Why was Sarah in need of occupational therapy services?

- A. She was experiencing role strain and role conflict during a time of occupational disruption.
- B. Her oldest child was seeking services for attention deficit hyperactivity disorder (ADHD) and anxiety.
- C. Her youngest child had previously received occupational therapy services.
- D. She was experiencing pain in her lower back and neck

5. What additional information was used in Jack's case to guide the therapist's clinical reasoning?

- A. Consultation with the family
- B. Allen's Cognitive Level Screen (ACLS)
- C. Upper body range of motion and strength assessment
- D. Evidence-based assessment

6. What additional information was used in Sarah's case to guide the therapist's clinical reasoning?

- A. Consultation with the family
- B. ACLS
- C. Upper body range of motion and strength assessment
- D. Evidence-based assessment

7. Which of the following is *not* a performance pattern?

- A. Ritual
- B. Habit
- C. Role
- D. Skill

8. During a time of occupational disruption, what is the most important outcome for occupational therapy practitioners to consider?

- A. Ensure access to medical treatment
- B. Ensure access to social media and daily news conferences
- C. Normalize disruption in occupation
- D. Provide meaning to the experience of living through a pandemic

9. Which of the following is the initial step in the evaluation process and used to provide a comprehensive understanding of the client as an occupational being?

- A. Occupational portrait
- B. Occupational evaluation
- C. Occupational profile
- D. Occupational narrative

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10. To deliver effective occupational therapy intervention during times of disaster, one must:

- A Use standardized assessments exclusively to ensure best outcomes
- B. Adjust goals and interventions to promote occupational performance
- C. Use non-standardized assessments exclusively to ensure best outcomes
- D. Have at least a master's level education and hold a license in the state where intervention is provided

11. Too many demands made on one's occupational role (e.g., mother, worker, spouse) leads to which of the following:

- A. Role conflict
- B. Role strain
- C. Stress
- D. Poor coping

12. Two occupational roles that place competing (and sometimes irreconcilable) demands on one's time creates:

- A. Role conflict
- B. Role strain
- C. Stress
- D. Poor coping

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Review Article

The Role of the Occupational Therapist in Disaster Areas: Systematic Review

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Background. Disasters are increasingly more frequent events on our planet. During disaster the role of the occupational therapist will require a more specific operative framework within nongovernmental organizations and community health services. *Design.* Systematic review. *Objective.* The aim of this study is to evaluate the evidence that highlight occupational therapist's role in disaster area through a systematic review. *Materials and Methods.* Research on MEDLINE was performed. All articles from 2005 to 2015 concerning rehabilitation and occupational therapy in disaster areas were included. *Results.* Ten studies were selected to be included in this review. Four interesting points emerged: the importance of having rehabilitation intervention in postdisaster situations, the necessity to include a rehabilitation team in the early phase of disaster response, the need to provide a method to address the difficult evacuation, and finding the safest method of transport of people with preexisting disabilities and new injuries. *Conclusions.* The amount of evidence with respect to specific intervention of the occupational therapist's role in a disaster situation is limited. However some evidence suggests that it could be a good means for reducing the number of medical complications and deaths of persons with preexisting disabilities. The evidences found highlight the necessity to create a multidisciplinary team addressing needs in disasters situation, in which the occupational therapist could certainly contribute.

1. Introduction

Disasters are increasingly more frequent on our planet, even though their distribution is directly linked to the geophysical characteristics of the different regions.

According to the International Federation of Red Cross and Red Crescent Societies, disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope based on its own resources [1]. Though often caused by nature, disasters can have human origins.

Usually, disasters are classified into two macrocategories: natural hazards and technological or man-made hazards. Natural hazards are naturally occurring physical phenomena caused either by rapid or slow onset events which can be geophysical (earthquakes, landslides, tsunamis, and volcanic activity), hydrological (avalanches and floods), climatological (extreme temperatures, drought, and wildfires), meteorological (cyclones and storms/wave surges), or biological (disease epidemics and insect/animal plagues). Technological or man-made hazards (complex emergencies/conflicts, famine, displaced populations, industrial accidents, and transport accidents) are events that are caused by humans and occur in or close to human settlements. These can include environmental degradation, pollution, and accidents. The combination of hazards, vulnerability, and inability to reduce the potential negative consequences of risk results in disaster.

From 1900 to 2014 natural hazard exponentially increased (Figure 1); in particular during the last decade these phenomena have often been registered in different parts of the world, as indicated by Centre for Research on the Epidemiology of Disasters (CRED) (Figure 2) [2].

The effects of each disaster do translate not only into numbers of deaths, but also mostly into long-term disabilities that result from it. The most frequent disabilities are spinal

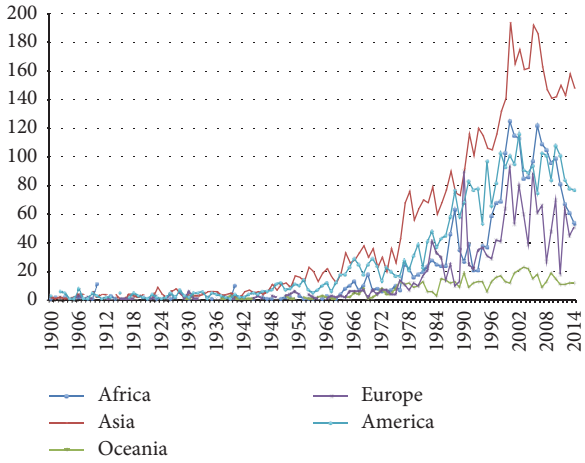

Figure 1: Number of natural disasters in the world from 1900 to 2014.

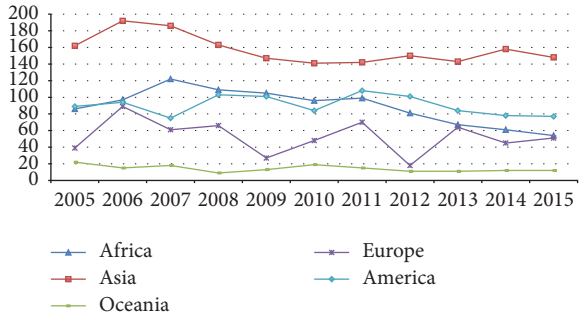

Figure 2: Number of natural disasters in the world from 2005 to 2015.

cord injury, traumatic brain injury, fracture, limb amputation, peripheral nerve injury, and crush injury [3].

In the early stages after a disaster, humanitarian organizations and community health services have to schedule aids in emergency conditions. Furthermore, both volunteers and those associated with humanitarian organizations actually prove to be able to manage complex circumstances [4].

For this reason, a multidisciplinary emergency team should include rehabilitation professionals: as their competences and expertise could be useful to recognize and manage similar disabilities while trying to reduce the high risk of medical complications and, in turn, a possible aggravation unstable situation during the acute phase [4, 5]. Indeed the most urgent priority is to save lives and help people with disabilities who are at greater risk of dying or being left behind during the evacuation [6, 7]. Special attention should be given to these vulnerable categories of persons by rehabilitation professionals.

2. Objective

The aim of this study is to evaluate the evidences available in the literature that highlight the occupational therapist's role in a disaster situation through a systematic review.

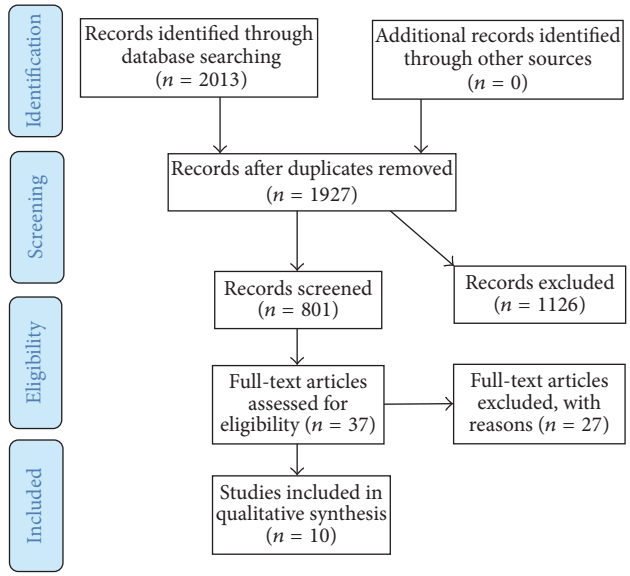

Figure 3: Flowchart.

3. Materials and Methods

Search terms included "rehabilitation", "disaster", "natural disaster", and "occupational therapy". Three independent searches were carried out using the following terminology: "disaster AND rehabilitation", "natural disaster AND rehabilitation", and "natural disaster AND occupational therapy". All included studies had the following criteria: published in English on MEDLINE from January 2005 to September 2015. All articles about rehabilitation and occupational therapy interventions in disaster areas were included. Studies that did not have these characteristics were excluded. Titles and abstracts were read, articles not meeting selection criteria were discarded, and those remaining were read in full to check for suitability, in accordance with the Preferred Reporting Items for Systematic and Meta-Analyses (PRISMA).

Data extraction was completed by one reviewer confirmed by a fellow author. Relevant articles meeting the inclusion criteria were reviewed with all relevant information, such as type of design, participants' characteristics, and significant findings of outcome.

4. Results

The database search yielded 109 papers which met inclusion criteria (Figure 3).

All articles referred only to postearthquake disaster management. Search results have been summarized in Table 1. Four interesting points emerged: the importance of having rehabilitation intervention in postdisaster situations, the necessity to include a rehabilitation team in the early phase of disaster response, the need to provide a method to address the difficult evacuation, and finding the safest method of mobilization.

.1.4 Rehabilitation in Postdisaster. Zhang et al. [12] studied the survivors to understand the motor functions and ADL

Table 1: Data extraction.

References	Objectives	Study type	Participants' characteristics	Results	Conclusions
Reinhardt et al. [8], 2011, Global Health Action	To examine the role of health-related rehabilitation in natural disaster relief along three lines of inquiry: epidemiology of injury and disability, impact on health and rehabilitation systems, and the assessment and measurement of disability.	Qualitative literature review	$N = 245$ deaths and affected by year and region $N = 26$ deaths in earthquake $N = 41$ deaths and affected in Asia	Major impairments requiring health-related rehabilitation include amputations, traumatic brain injuries, spinal cord injuries (SCI), and long bone fractures. Studies show that persons with preexisting disabilities are more likely to die in a natural disaster.	Additional development of health-related rehabilitation following natural disasters is urgently required.
Hunt et al. [9], 2015, Global Health Action	To better understand the perceptions of responders and decision-makers regarding disability and efforts to address the needs of PWD following the 2010 earthquake.	Qualitative study	$N = 24$ persons involved in the national and international first aid associations; 11 women; 13 men	Participants identified PWD as being among the most vulnerable individuals following the earthquake. Though some forms of disability received considerable attention in aid efforts, the needs of other PWD did not. Several factors were identified as challenges for efforts to address the needs of PWD including lack of coordination and information sharing, the involvement of multiple aid sectors, perceptions that this should be the responsibility of specialized organizations, and the need to prioritize limited resources.	There have been several efforts to promote best practices and develop guidelines to better address the needs of PWD in disasters; significant obstacles remain to the implementation of disaster preparedness, relief, and reconstruction that is inclusive of PWD and responsive to their needs.
Khan et al. [3], 2015, Archives of Physical Medicine and Rehabilitation	To present an evidence-based overview of the effectiveness of medical rehabilitation intervention in natural disaster survivors and outcomes that are affected.	Systematic review	$N = 10$ studies (2 randomized controlled trials, 8 observational studies) $N = 2013$ participants; age −76, mostly women	There are some evidence for the rehabilitation short and long-term improvement in terms of functional activity, psychological symptom, and participation. More attention must be paid to the rescue of preexisting disabilities.	The findings highlight the need to incorporate medical rehabilitation into response planning and disaster management for future natural catastrophes. Access to rehabilitation and investment in sustainable infrastructure and education are crucial. More methodologically robust studies are needed to build evidence for rehabilitation programs, cost-effectiveness, and outcome measurement in such settings.

Table 1: Continued.

References	Objectives	Study type	Participants' characteristics	Results	Conclusions
Gosney et al. [5], 2013, Spinal Cord	To summarize epidemiological and scientific research on spinal cord injury (SCI) populations from three severe earthquakes (EQs) in rehabilitation resource-scarce settings; summarize SCI rehabilitation services by local and foreign providers; and provide implications including research gaps for a supporting global scientific research agenda.	Narrative literature review	N = 11 studies [4, 2005 Pakistan earthquake; 4, 2008 China earthquake; and 3, 2010 Haiti earthquake)	The range of long-term disabilities is more than death's range. Sometimes the rescue operation of SCI patients is not accurate; therefore the clinical picture is made worse.	A global disaster research agenda for SCI in EQs in rehabilitation resource-scarce settings is needed to strengthen the evidence base for improvement of clinical management and outcomes for SCI EQ survivors.
Liu et al. [10], 2012, Journal of Rehabilitation Medicine	To provide descriptive epidemiology and assess the activities of 109 rehabilitation-related organizations.	Descriptive	109 rehabilitation-related organizations	10-RRO provided relief activities at 39 shelters. Support activities included prevention of immobilization, daily life support, environmental improvement, and transition to temporary housing. The questionnaire survey revealed poor preparedness, satisfactory initial response and support activities, and problems of data collection and advocacy.	The disaster was characterized by minimal trauma and a great need for preventing immobilization. There is an urgent need to develop such a manual to improve preparedness and enhance capability of first aid team to cope with disasters.
Landry et al. [11], 2010, Disability and Rehabilitation	To underline the role of rehabilitation during and after Haiti earthquake	Report	Undefined	There is a remarkable increment of permanent disabilities caused also by attempt of rescues. For this reason there is a tremendous need of rehabilitation services.	The events have raised awareness of the importance of rehabilitation services and highlighted the need to incorporate rehabilitation into response planning for future humanitarian catastrophes.
Zhang et al. [12], 2011, Chinese Medical Journal	To value disability impact on motor function and ADL	Retrospective cohort study	N = 320 patients; 218 men, 55.2% fractures; 117 women, 44.8% fractures;	Most survivors 82% had decreased ROM and 23.5%. Muscle force 72.2% had also restricted ADL capacities. With time the ADL capacities of female patients increased compared to the male patients.	Fractures were the main issue among the injured. Many patients had decreased ROM, ADL capacities, and muscle force; this highlights that physician, involved in rehabilitation, should pay great attention to muscle force exercises, joint mobilization, and occupational therapy during the early phase after disaster.

Table 1: Continued.

References	Objectives	Study type	Participants' characteristics	Results	Conclusions
Rathore et al. [13], 2008, Archives of Physical Medicine and Rehabilitation	To sum up the interventions, the gaps, and the needs emerged the day after the 2005 earthquake in Pakistan.	Report	The ratio of males to females injured 1991.39 Mean age 28,9 16.5% less than 18 y; 89% paraplegia cases	Spinal trauma is a surgical emergency that requires specialized care in the initial immobilization and transport of a patient. Unfortunately, after the earthquake, there was usually such little care taken in transporting patients with a suspected or diagnosed SCI. Many physicians involved in the care of SCI patients were unaware of the ASIA system and its worksheet documentation. This resulted in errors in the diagnosis of complete and incomplete SCI.	There is a need to increase disaster preparedness and have a tangible disaster management plan in place and periodic disaster drills. Trauma management in disasters and the correct SCI evacuation, immobilization, and transport protocols should be taught during the training of emergency relief workers, ambulance officers, army medical staff, resident surgeons, and emergency physicians. Rescue units trained in methods to avoid and minimize spinal injuries should be established.
Rathore et al. [4], 2012, Archives of Physical Medicine and Rehabilitation	To stimulate development of research and practice in the emerging discipline of disaster rehabilitation within organizations that provide medical rehabilitation services during the postdisaster emergency response.	Report	Undefined	Medical rehabilitation is an urgent, essential emergency medical service in disasters and not restricted to the intermediate and long-term care settings. Emergency rehabilitation services should only be provided by trained, credentialed professionals to ensure practice accountability and proper standards of care. Nonqualified personnel, although well intentioned, should provide care only in the event of extreme emergency and under strict supervision.	Evidence on the effectiveness of disaster rehabilitation interventions is presented; indeed these services can reduce morbidity and improve functional results and survival.

capacity of patients with fractures sustained in the Wenchuan earthquake in 2008 and to provide a basis for rehabilitation and treatment. Fractures were the main issue in the seismic wounded; many of survivors had reductions in ROM, muscle force, and ADL capacities. Authors conclude that physicians involved in rehabilitation should pay greater attention to muscle force exercises, joint mobilization, and occupational therapy during the early phases after disaster.

Rauch et al. [14] described problems in functioning and associated rehabilitation needs in persons with spinal cord injury after the 2010 earthquake in Haiti by applying a newly developed tool based on the International Classification of Functioning, Disability and Health (ICF). This ICF-based needs' assessment provided useful information for rehabilitation planning in the context of natural disaster. Authors conclude that a multidisciplinary approach would be needed and in particular in low-resource countries it is crucial to enable local staff to perform assessments and provide education and training in rehabilitation management.

Reinhardt et al. [8] presented an evidence-based overview of the effectiveness of medical rehabilitation interventions in natural disaster survivors and outcomes that are affected. The findings suggest some evidence for the effectiveness of inpatient rehabilitation in reducing disability and improving participation and quality of life and in community-based rehabilitation program for participation. The findings also highlight the need to incorporate medical rehabilitation into response planning and disaster management for future natural catastrophes.

.2.4Rehabilitation4during4Early4Phases4of4Response.4 Reinhardt et al. [8] have examined the role of health-related rehabilitation in disaster relief in terms of the epidemiology of injury and disability in natural disasters, the impact of natural disasters on health and rehabilitation systems, and the assessment of disability due to natural disasters. Authors also analyze the condition of persons with preexisting disabilities after a natural disaster: the loss of medications and assistive technologies can impair their quality of life. Furthermore the lack of trained support personnel can worsen the condition of these vulnerable persons. Authors conclude that significant systematic challenges to effective delivery of rehabilitation interventions during disasters include a lack of trained responders as well as a lack of medical recordkeeping, data collection, and established outcome measures.

Khan et al. [3] suggest that it is crucial to have support of a multidisciplinary team—including occupational therapist—in the early phase of a disaster. They also analyze the role of Physical and Rehabilitation Medicine and developed some recommendations including the necessity to develop scientific evidence for medical rehabilitation in the emergency disaster response, to develop a rehabilitation disaster relief expertise, and to strengthen an international rehabilitation emergency response capability where both International Society of Physical and Rehabilitation Medicine and other rehabilitative associations could cooperate.

Landry et al. [11] analyzed the situation that occurred after earthquake in Haiti in 2010 as an important inflection point for international humanitarian efforts that target rehabilitation. Authors analyzed problems related to organizing early intervention in a low-resources country based on treatment of disabling consequences and based on relieving the stress of local health care systems. In this article authors highlighted the need to incorporate rehabilitation into response planning for future humanitarian catastrophes.

.3.4The4Issues4of4Persons4with4Preexisting4Disabilities.4 Liu et al. [10] focused their intervention in particular to prevent immobilization syndrome and progressive functional deterioration among frail elderly survivors and persons with preexisting disabilities who were forced to stay in shelters that were not designed to encourage physical activity. Authors evaluate activities of 10 rehabilitation-related organizations, which include the occupational therapist. This first collaborative disaster relief endeavour by rehabilitation-related organizations and professionals has contributed to a strong foundation for future interdisciplinary and interorganizational collaborative activities.

Hunt et al. [ ] contribute to better understanding of the perceptions of responders and decision-makers regarding disability and efforts to address the needs of persons with disabilities following the 2010 earthquake in Haiti. In fact, following disasters, persons with disabilities are especially vulnerable to harm, yet they have commonly been excluded from disaster planning, and their needs have been poorly addressed during disaster relief.

4.4.4The4Need4of4a4Correct4Mobilization4and4Transport4for4the4Newly4Acquired4and4Old4Disabilities.4 Gosney et al. [5] in this narrative review collected data about spinal cord injury (SCI), one of the most frequently occurring disabilities after a hazard. Authors discuss the correct managing of SCI and underline the importance of correct mobilization of new acquired injury. This article strengthens the idea of the necessity of a multidisciplinary approach.

Rathore et al. [13] shed light on some crucial aspects that emerged during the first aid phases in the 2005 Pakistan earthquake by summarizing the services provided. Above all, the issue of evacuation and transport of the newly acquired SCI was addressed. Authors highlighted the lack of first response teams working in the emergency after disaster to correctly evacuate, safely mobilize, and transport people with SCI.

5. Discussion

Articles focusing on occupational therapy were not found. However, different experiences of occupational therapists were cited emphasizing their appropriateness due to professional training. After our analysis, it seems fitting that occupational therapist may be eligible into being a part of the response team in a natural disaster.

According to the American Occupational Therapy Association's (AOTA) position paper regarding the role of

occupational therapy in disaster preparedness, response, and recovery, five stages of disaster relief were categorized:

(i) preimpact;

(ii) impact;

(iii) immediate postimpact;

(iv) recovery;

(v) reconstruction [15].

Considering preimpact and impact stages, occupational therapist may find his competencies more useful to organize in collaboration with multidisciplinary team such as an evacuation plan for people affected by preexisting disabilities and planning access to first aid facilities, which are not always accessible for people with mobility impairment.

Occupational therapists are also widely involved in immediate postimpact, recovery, and reconstruction stages. They can work both in subacute rehabilitation treatment facilities and promoting the reintegration of the individual into family and society. The immediate role of the occupational therapist in the postimpact phase is not well defined in the literature; evidence suggests the necessity to create a multidisciplinary network to better organize technical operations.

In Rathore et al.'s study "Rehabilitation during Early Phase of Response" focused on what physiatrists can do during early phases of intervention. Authors confirm the necessity to create a multidisciplinary international network to manage emergency operations.

In the "Rehabilitation in Post Disaster" section the authors highlight the importance of evaluation of any assistive technologies needed, such as wheelchairs. Furthermore mobilizing preexisting or newly acquired disabilities require professional skills and a trained therapist or volunteer in order to reduce the risk of wrong and hazardous movements.

In the "The Issues of Persons with Pre-Existing Disabilities" section the authors describe the importance of a communitarian approach to improve rehabilitation and prevent progressive functional deterioration of people with disabilities. Authors stressed the importance to define an operative framework within community health services.

Therefore, we believe that the occupational therapist can play a significant role in different situations.

6. Study Limitations

One of the most important limitations that our study encountered was the low number of scientific evidence and the lack of material on this topic in the literature. In fact there were no articles in which occupational therapy was the centre of the rehabilitation interventions. Furthermore, lots of studies were conducted in very poor areas, such as Haiti, Pakistan, and the countryside of China, where health and rehabilitation networks are not well developed.

7. Conclusions

In conclusion, this study had the objective of verifying evidence about occupational therapist intervention [16, 17] in a disaster area. We can state that occupational therapist could reduce complications' rate and worsening of medical case.

The ten articles included talked about the necessity of a rehabilitation team in providing measures to reduce damage in early postimpact phases. The occupational therapist could take an active role in emergency management, as follows:

(i) They are important members of any rehabilitation team and can provide vital service in the early phase of response.

(ii) They have expertise in caring for preexisting disabilities.

(iii) They have expertise in problem solving to correct mobilization and evacuation, while taking into consideration preexisting and newly acquired conditions.

Therefore, investing and introducing occupational therapists in first response teams could not only translate into a reduction of medical complications and a better quality of life for people with disabilities, but could also translate into potential economic benefits as cutting the cost for care additional services and assistance from National Health Systems.

Another aspect that we might consider is the possibility of using an occupation therapist as an instructor to provide necessary education to multidisciplinary team and as a volunteer who helps in emergency management.

Competing Interests

The authors declare that they have no competing interests.

References

[1] https://www.scribd.com/presentation/243634776/Simposium-Fisika-Nasional-Bali-Bali.

[2] D. Guha-Sapir, R. Below, and Ph. Hoyois, EM-DAT: The CRED/OFDA International Disaster Database, Université Catholique de Louvain, Brussels, Belgium, http://www.emdat.be.

[3] F. Khan, B. Amatya, J. Gosney, P. A. Rathore, and F. M. Burkle, "Medical rehabilitation in natural disasters: a review," *Archives of Physical Medicine and Rehabilitation*, vol. 96, no. 9, pp. 1701–1727, 2015.

[4] F. A. Rathore, J. E. Gosney, P. D. Reinhardt, A. P. Haig, J. Li, and J. A. Delisa, "Medical rehabilitation after natural disasters: why, when, and how?" *Archives of Physical Medicine and Rehabilitation*, vol. 93, no. 10, pp. 1875–1881, 2012.

[5] J. E. Gosney, P. D. Reinhardt, P. M. Von Groote, P. A. Rathore, and J. L. Melvin, "Medical rehabilitation of spinal cord injury following earthquakes in rehabilitation resource-scarce settings: implications for disaster research," *Spinal Cord*, vol. 51, no. 8, pp. 603–609, 2013.

[6] M. Liu, M. Kohzuki, A. Hamamura et al., "How did rehabilitation professionals act when faced with the Great East Japan earthquake and disaster? Descriptive epidemiology of disability and an interim report of the relief activities of the ten rehabilitation-related organizations," *Journal of Rehabilitation Medicine*, vol. 44, no. 5, pp. 421–428, 2012.

[7] M. R. Hunt, R. Chung, E. Durocher, and J. H. Henrys, "Haitian and international responders' and decision-makers' perspectives regarding disability and the response to the 2010 Haiti earthquake," *Global Health Action*, vol. 8, Article ID 27 96 9, 2015.

[8] D. Reinhardt, J. Li, G. Gosney et al., "Disability and health-related rehabilitation in international disaster relief," *Global Health Action*, vol. 4, article 71 91, 2011.

[9] M. R. Hunt, R. Chung, E. Durocher, and J. H. Henrys, "Haitian and international responders' and decisionmakers' perspectives regarding disability and the response to the 2010 Haiti earthquake," *Global Health Action*, vol. 8, no. 1, Article ID 27 96 9, 2015.

[10] M. Liu, M. Kohzuki, A. Hamamura et al., "How did rehabilitation professionals act when faced with the Great East Japan Earthquake and Disaster? Descriptive epidemiology of disability and an interim report of the relief activities of the TEN Rehabilitation related Organizations," *Journal of Rehabilitation Medicine*, vol. 44, no. 5, pp. 421–428, 2012.

[11] M. D. Landry, C. O'Connell, G. Tardif, and A. Burns, "Post-earthquake Haiti: the critical role for rehabilitation services following a humanitarian crisis," *Disability & Rehabilitation*, vol. 32, no. 19, pp. 1616–1618, 2010.

[12] J.-L. Zhang, H.-C. He, H.-D. Lin et al., "Motor function and activities of daily living capacity of patients with fractures sustained during the Wenchuan earthquake," *Chinese Medical Journal*, vol. 124, no. 10, pp. 1504–1507, 2011.

[13] F. A. Rathore, F. Farooq, S. Muzammil, W. New, N. Ahmad, and A. J. Haig, "Spinal cord injury management and rehabilitation: highlights and shortcomings from the 2005 earthquake in pakistan," *Archives of Physical Medicine and Rehabilitation*, vol. 89, no. 9, pp. 579–585, 2008.

[14] A. Rauch, M. Baumberger, F.-G. Moise, E. Von Elm, and J. D. Reinhardt, "Rehabilitation needs assessment in persons with spinal cord injury following the 2010 earthquake in Haiti: a pilot study using an ICF-based tool," *Journal of Rehabilitation Medicine*, vol. 43, no. 11, pp. 969–975, 2011.

[15] M. A. Pizzi, "Hurricane Sandy, disaster preparedness, and the recovery model," *American Journal of Occupational Therapy*, vol. 69, no. 4, pp. 6904250010p1–6904250010p10, 2015.

[16] G. Galeoto, R. De Santis, A. Marcolini, A. Cinelli, and R. Cecchi, "The informed consent in occupational therapy: proposal of forms," *Giornale Italiano di Medicina del Lavoro ed Ergonomia*, vol. 38, no. 2, pp. 107–115, 2016.

[17] G. Galeoto, R. Mollica, O. Astorino, and R. Cecchi, "Informed consent in physiotherapy: proposal of a form," *Giornale Italiano di Medicina del Lavoro ed Ergonomia*, vol. 37, no. 4, pp. 245–254, 2015.

POSITION STATEMENT

Occupational Therapy in Disaster Preparedness and Response (DP&R)

Introduction

Occupational Therapy is a profession concerned with promoting health and well-being through occupation. The primary goal of occupational therapy is to enable people to participate successfully in activities of everyday life in a range of environments and participate in community. Occupational therapists (OTs) achieve this outcome by enabling people to do things that will enhance their ability to live meaningful lives.

Disasters, both natural and man-made, are occurring more regularly world-wide. The World Federation of Occupational Therapists (WFOT) acknowledges that they can cause loss of life, property damage, and economic loss. They can affect a person's health, well-being and ability to engage in meaningful activities of life. Community resilience and positive well-being are key themes in disaster response and are supported by meaningful occupation.

The World Federation of Occupational Therapists position is that:

Occupational therapists facilitate the engagement in meaningful routines and occupations which may be disrupted by disaster.

Occupational therapists should be involved in all stages of disaster management at both local and national level. This involvement ranges from immediately post disaster to long term rehabilitation and reconstruction. It also includes planning and preparation.

The WFOT notes that effective disaster preparedness and response management also requires long term strategies in collaboration with key stakeholders.

Significance to Society

Through an occupational focus, disaster-affected communities and people are better served in their ongoing efforts to rebuild their lives and livelihoods, contributing to outcomes that can be sustained by local service providers and systems. Improved occupational engagement promotes positive well-being and mental health, enabling greater productivity and community resilience.

Occupational therapists engaging with disaster and reconstruction policy, planning and coordination mechanisms, contribute pertinent expertise to response efforts while laying the foundation for more cohesive involvement and response efforts in the event of future disasters.

Stronger networking and coordination between local health professionals, government services and projects, and national and international NGO programs, potentially provide for a more integrated, holistic and yet rationalised and self-reliant service framework.

At a more practical level, benefits include: better quality, ongoing care and support for individuals and their families, particularly those with psycho-social trauma and physical injuries who will benefit from occupational and community based rehabilitation and support programs; stronger referral and follow-up systems between community care, hospital and rehab centre programs; and more disability and age friendly accessibility in private and public buildings/spaces.

Significance to Occupational Therapy

Specific roles post-disaster may include but are not limited to:

- ensuring accessible environments post disaster at all stages of recovery (e.g. in displaced persons camps) and reconstruction (in rebuilding homes and community facilities) to better support participation.
- organization of daily routines in displaced persons camps and surviving communities to include persons with disabilities and existing illnesses, women, elderly and children
- facilitating access to mainstream health care services
- liaison with and encouragement of community leaders and others to reorganize community supports and routines
- use of everyday occupations to facilitate recovery
- facilitating the reestablishment of livelihoods
- assessment of mental health status of survivors for anxiety, depression and suicidal tendencies, with subsequent counselling and occupation-based activities
- training of volunteers to carry out 'quick mental health assessment' and counselling, and to facilitate activities and social connectivity, thus providing more immediate services for greater numbers.

Challenges

Occupational therapists are challenged to raise awareness of the benefits of occupational therapy and occupation-based community involvement to both government and community leaders. Capacity building is necessary to ensure that occupational therapy volunteers are prepared to undertake disaster response.

Strategies

For individual occupational therapists, key recommendations include involvement with local community disaster preparedness and planning to include vulnerable groups.

For national associations: Through national workshops and capacity building, national associations can support occupational therapists to more effectively be involved in disaster response. For occupational therapists affected by disaster and engaged directly in disaster response, national associations can provide support.

For WFOT: Provision of timely responses, distribution of support materials and information package, ongoing support and networking.