



2023

Occupational Therapy's Role in Natural Disasters

Olivia A. Dobrinz

Elise N. Gapp

Jocelyn R. Kirk

[How does access to this work benefit you? Let us know!](#)

Follow this and additional works at: <https://commons.und.edu/cat-papers>



Part of the [Occupational Therapy Commons](#)

Recommended Citation

Dobrinz, Olivia A.; Gapp, Elise N.; and Kirk, Jocelyn R., "Occupational Therapy's Role in Natural Disasters" (2023). *Critically Appraised Topics*. 67.

<https://commons.und.edu/cat-papers/67>

This Critically Appraised Topic is brought to you for free and open access by the Department of Occupational Therapy at UND Scholarly Commons. It has been accepted for inclusion in Critically Appraised Topics by an authorized administrator of UND Scholarly Commons. For more information, please contact und.common@library.und.edu.

Occupational Therapy's Role in Natural Disasters

Olivia A. Dobrinz, OTS, Elise N. Gapp, OTS & Jocelyn R. Kirk, OTS

Department of Occupational Therapy, University of North Dakota, Grand Forks, North Dakota, United States

Please direct correspondence to Olivia Dobrinz at olivia.dobrinz@und.edu.

***This resource was written by doctoral-level students in fulfillment of the requirements of the Occupational Therapy course "OT 403 - Clinical Research Methods in Occupational Therapy" at the University of North Dakota School of Medicine and Health Sciences, under the advisement of Professor/Course Director Anne Haskins, Ph.D., OTR/L, Assistant Professor Breann Lamborn, EdD, MPA, Professor Emeritus Gail Bass Ph.D., OTR/L, and Research and Education Librarian Devon Olson Lambert, MLIS.



Dorbinz, O. A., Gapp, E. N., & Kirk, J. R. , 2020

©2020 by Dorbinz, O. A., Gapp, E. N., & Kirk, J. R. This work is licensed under the Creative Commons Attribution International license (CC BY). To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>



Dorbinz, O. A., Gapp, E. N., & Kirk, J. R., 2020

Focused Question

What are the roles of occupational therapists who provide interventions for improving quality of life and occupational participation for individuals following a natural disaster?

Case Scenario

This critically appraised topic paper (CAT) focuses on interventions for improving individuals' quality of life and occupational participation following a natural disaster. Described within this CAT are the impacts on individual's occupations following a natural disaster, the quality of life for individuals, and occupational therapy's role in improving an individual's quality of life and occupational participation.

Occupations Impacted and Natural Disasters

Natural disasters vary in magnitude and destruction. Due to the unexpected and unpredictable nature of a natural disaster, severe impacts can be made to infrastructure, life and the economy (Hidalgo & Baez, 2019). The occupations that could be affected include health management, home management, activities of daily living (ADLs), instrumental activities of daily living (IADLs), rest and sleep, play, leisure, work, and social participation (AOTA, 2020). Natural disasters affect persons with preexisting disabilities by the potential loss of medications and impairment with assistive technology, overall impairing quality of life (Parente et al., 2017). A natural disaster affects an individual's home which is foundational to providing them with safety and security ultimately impacting all occupations (Makwana, 2019). The population of people who have been displaced due to natural disasters have a higher rate of difficulty finding food to nourish themselves adequately to participate in all occupations, such as work, leisure, and social participation (Bacon et al., 2017).

Quality of Life

Quality of life can be affected for people who have experienced a natural disaster. A natural disaster can disrupt and damage an individual's life, social roles, and economic balance (Jeong et al., 2016). Psychological effects often last longer than physical effects, which both decrease the quality of life for individuals who experienced a natural disaster (Jeong et al., 2016). Psychological symptoms that could be developed include uncontrollable stress, feelings of grief and sadness for a prolonged period of time, substance dependency, and challenges adjusting to post natural disaster conditions; all of which decrease quality of life and create conflict between people managing natural disaster effects (Makwana, 2019). The culture of communities includes rituals, rites, and behavioral expectations (Baptiste, 2017). Behavioral expectations of individuals who experience a natural disaster can be disrupted resulting in altering the techniques to managing their grief and anger. It is crucial for people to be able to do their cultural and religious ceremonies, such as burials, and be provided designated spaces where natural disaster survivors can gather to process their feelings which may be behavioral expectations (Jeong et al., 2016). Natural disasters can significantly impact individuals', families', and communities' quality of life.

Occupational Therapy's Role

There are various roles through which occupational therapists can contribute, in regard to natural disaster recovery, rehabilitation, and reconstruction. A role that occupational therapy professionals fulfill is to serve as a provider of mental health services due to the profession's knowledge on the association between engagement in meaningful occupation-based activities and mental health (Ching & Lazaro, 2021; Rashad et al., 2022). Occupational therapy's role when working with people who have experienced a natural disaster can involve restoring survivors' roles and routines, creating coping strategies, promoting resiliency, self-regulation,



social participation and community collaboration through identifying resources (Jeong et al., 2016; Rashad et al., 2022). Occupational therapists can also provide education and training to local personnel and volunteers pertaining to mobility, managing adaptive equipment, and transfer techniques (Habib et al., 2013; Jeong et al., 2016). Occupational therapists can also provide age-appropriate activities for children to engage in play as well as physical activities to promote leisure for adults who are impacted by natural disasters (Ching & Lazaro, 2021; Rashad et al., 2022). According to Sanderson et al. (as cited in Rashad et al., 2022, p. 2), “a child affected by trauma may struggle with play and learning; therefore, by targeting play skills, practitioners can rebuild safety and normalcy into routines and role.”

When considering a particular theory to guide the interpretation of literature, the Person-Environment-Occupation (PEO) model is the most appropriate model for our focus question. The PEO model encompasses the interaction between the person and their environment (Baptiste, 2017). Within the PEO model, the person includes physical, affective, sensory, spiritual, and cognitive aspects for individuals, families, communities, etc. (Baptiste, 2017). The environment includes physical, virtual, cultural, institutional, and social factors (Baptiste, 2017). The person’s performance is based on the transactions between the person and the environment (Baptiste, 2017). A transaction is described as when the “fit” of the person, environment and occupation maximize occupational performance (Baptiste, 2017). Therefore, occupational therapy views the person holistically while considering all factors of the person and how a natural disaster affects their lives.

Purpose Statement

While there is existing evidence about occupational therapy's role in natural disasters, there is a significant lack of evidence that analyzes how occupational therapy can enhance quality of life and increase occupational participation. The purpose of this CAT is to identify the specifics related to the role of occupational therapists providing interventions for improving quality of life and enhancing occupational participation for individuals who experience a natural disaster.

Methodology

An initial literature search was conducted from February 27, 2023, to March 27, 2023. Using a variety of databases including: PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL). A selection of literature articles were also searched for within the American Occupational Therapy Association (AOTA), the Australian Occupational Therapy Journal, and Occupational Therapy International. When searching for articles, a combination of key terms were used such as “natural disasters”, “displacement”, “disasters”, “occupational therapy”, “families”, “individuals”, “impacts”, “intervention”, “quality of life”, and “trauma”. Boolean operators “AND” and “OR” were used to combine search terms and phrases. Articles not written in the English language and published before 2013 were excluded. An exception was made for the inclusion of one article from 2006 and one article from 2012 due to the fact that the articles included relevant data.

Types of Articles Reviewed

A total of 33 articles were reviewed and 13 were chosen for further, in-depth review. These 13 articles were chosen based on their evidence regarding natural disasters and occupational therapy’s role in improving quality of life for those who have been affected by a natural disaster. Of those 13 articles, 5 represented level I studies (Jeong et al., 2016; Parente et al., 2017; Rashad et al., 2022; Scaffa et al., 2006; Shin & Ji, 2021), 3 represented level IV (Bacon et al, 2017; Ching & Lazaro, 2021; Hikichi et al., 2020), and 4 represented level N/A



evidence (Bondoc & Ching, 2015; Duque et al., 2012; Habib et al., 2013; Makwana, 2019; Pizzi, 2015). Other resources reviewed included an occupational therapy textbook that was used for concept definitions and the theoretical base utilized (Baptiste, 2017).

Synthesis Summary of Key Findings

Theoretical Base

The purpose of this CAT paper was to look at the role of occupational therapists who provide interventions for improving quality of life and occupational participation for individuals following a natural disaster using the PEO model. The model focuses on the transaction between the person and environment in regard to how it influences occupational performance and engagement (Baptiste, 2017). The PEO model allows occupational therapists to discover their role in finding the best fit for intervention towards improving quality of life and occupational participation for individuals following a natural disaster (Baptiste, 2017). The PEO model allows occupational therapists to understand the individuals and populations needs which promotes therapist creativity to create client-centered interventions, improving quality of life for those receiving interventions (Baptiste, 2017).

Person

When utilizing the PEO model, the person can be identified as an individual, family, community, circle of care etc. (Baptiste, 2017). The “person” consists of the physical, cognitive, affective, sensory, and spiritual aspects that make up the “person” (Baptiste, 2017). A natural disaster can significantly impact these aspects of a person, which can lead to a decreased quality of life (Jeong et al., 2016; Makwana, 2019).

Physical. Physical components of the person include all aspects that make up their body such as strength, movement, and cell to skin (Baptiste, 2017). Within the “person” domain, there are physical implications that contribute towards a decrease in occupational performance post-natural disaster. Physical complications that can occur in response to being impacted by a natural disaster include, but are not limited to, fractures, amputations, brain injuries, spinal cord injuries (Jeong et al., 2016). Less severe implications include reductions in range of motion and muscle force (Parente et. al, 2017). When a person's physical state is negatively affected, it can cause significant damage to their quality of life and meaningful occupations, due to physical limitations and having to adapt to new or ongoing conditions.

Cognitive & Affective. The cognitive domain includes things such as thought, memories, reasoning, and judgment, while the affective domain includes emotions and mood (Baptiste, 2017). For the person who experiences a natural disaster, their cognitive and affective state may be negatively impacted. People affected by natural disasters experience psychological effects such as stress, anxiety, and depression (Jeong et al., 2016). While natural disasters may harm people’s mental health, the aftermath may provide an opportunity to practice skills that allow people to deal with adversity. In a longitudinal study, Shin and Ji (2021) explained that natural disasters induce stress and people can be resilient to disasters if they are able to be proactive to support their prior good health. Due to “occupational therapy practitioners understanding the association between active engagement and positive mental health as well as the importance of activity and occupation-based interventions for mental health” (Cahill et al., 2020), these areas may be important to consider for interventions.

Sensory & Spiritual. The sensory domain includes the person's touch, smell, hearing, and sight (Baptiste, 2017). People with sensory needs are greatly impacted due to the deregulation of sensory input caused from a natural disaster. Emergency locations do not accommodate the needs of people needing specific sensory input (Scaffa et al., 2006). People



with sensory needs may become deregulated causing a decrease in quality of life because of disruption in daily routines (Scaffa et al., 2006). There is a definite need for further research and disaster planning in order to consider individuals' sensory needs following a natural disaster, as evidenced by the lack of research regarding this population. The spiritual aspect of a person includes their essence of self, connection to something greater than self, religion, belief and value system, and an internalized sense of meaning and purpose (Baptiste, 2017). Spiritual expression allows individuals to have a sense of identity and confidence in their occupations (Scaffa et al., 2006). A sense of identity and confidence can contribute to a person's overall quality of life.

Environment

Physical. The physical environment includes the natural environment such as climate, vegetation, and fauna (Baptiste, 2017). It also includes the built environment that is comprised of houses, offices, parks, and ponds (Baptiste, 2017). The physical environment plays a significant role towards the person's quality of life, especially after the person and environment are exposed to a natural disaster. The physical environment that may be impacted includes the person's home, work environment, leisure establishments, educational institutes, and resource centers for children (Duque et al., 2012; Rashad et al., 2022). When these environments are altered, the person's roles, routines, habits and quality of life will be disrupted due to physical destruction of buildings, which then interrupts the ability to gather and participate in desired occupations (Duque et al. 2012). Minority populations such as "people with disabilities, immigrants and refugees, and those living in resource-poor areas may have increased vulnerability to the natural disaster" (Rashad et al., 2020, p.1). The resource-poor areas lead to minority populations having an "inequitable risk exposure and decreased access to social resources, leading to extensive displacements and increased consequences because of previous injustices in housing segregation and environmental systems" (Rashad et al., 2022, pp.1-2).

Social & Cultural. The cultural components of the environment include the rituals, rites, special food, and behavioral expectations (Baptiste, 2017). The social environment includes the individual's primary and secondary groups, family, teams, and intimate partners (Baptiste, 2017). The destruction of physical and social environments are greatly impacted by natural disasters. This may be due to the reality that physical environments provide a place for people to socially gather (Scaffa et al., 2006). This can contribute to loss of relationships, elimination of social settings, destroyed communities and sense of belonging (Scaffa et al., 2006). Not engaging in social participation or group activities can severely impact the psychosocial well-being of a person which could lead to a decreased quality of life (Scaffa et al., 2006). The association between community-level informal socializing/social participation and cognitive decline was both statistically and substantively (i.e., clinically) important (Hikichi, et al. 2020). The lack of social interactions and participation within the community contribute to cognitive decline due to decreased social capital, meaning the lack of trust between community members and a sense of community cohesion (Hikichi, et al. 2020). Socializing in groups who are like minded can often contribute to the culture a person identifies because of shared values. Thus, aspects of culture and religion are impacted by a natural disaster due to the inability to physically gather with one another (Scaffa et al., 2006). Physical environments provide opportunities for people to safely engage in social participation. The grieving process of the aftermath of a natural disaster varies and can be carried out differently with respect to the person's culture or religion. Culturally and religiously relevant ceremonies are essential for survivors to express important practices and internal feelings (Jeong et al., 2016). If a natural disaster does not allow a person to carry out



their cultural or religious ceremonies, the person's quality of life could consequently be impacted. The ability to practice cultural norms is important for people who have been affected by a natural disaster (Jeong et al, 2016). Occupational therapists need to consider cultural and religious norms when considering interventions.

Virtual & Institutional. Virtual environments are defined as technology, social networks, and open online courses (Baptiste, 2017). Institutional environments are defined as a government such as laws and policies, systems such as finance, education, and justice as well as benefits and rights. Although virtual and institutional environments are not prominent in the literature about natural disaster recovery, occupational therapists could utilize these environments to increase quality of life for those who have been affected by natural disaster. In a phenomenological study, occupational therapy students who experienced a natural disaster reported that communicating through technology, including phone calls and text messages, helped to reconnect with others and feel a sense of normalcy (Pizzi, 2015). Occupational therapists can also improve quality of life by providing supportive services by telephone for those affected by a natural disaster (Scaffa et al., 2006).

Interventions

Opportunities for occupational therapists to provide interventions may become limited due to natural disasters, but occupational therapists must find a way to help those in need. Arbesman et al. (2013) suggested occupational therapy can create client-based programs that improve health, resilience, and occupational performance through the use of yoga, performing arts, stress management, mental health education, and play groups. Occupational therapists can also provide age-appropriate activities for children to engage in play as well as physical activities to promote leisure for adults who are impacted by natural disasters (Ching & Lazaro, 2021; Rashad et al., 2022). Other potential interventions include use of advocacy, coping strategies, and mental health services for victims, families, first responders, and volunteers as well as enhancing the psychosocial well-being and the quality of life of the community members affected (Bondoc & Ching, 2015; Jeong et al., 2016; Parente et al., 2017; Rashad et al., 2022; Scaffa et al., 2006). Occupational therapy practitioners have the expertise to facilitate support groups to help people affected by natural disasters reduce levels of anxiety and stress (Scaffa et al., 2006). Occupational therapists can also provide education to local personnel and volunteers on mobility, managing adaptive equipment, and transfer techniques to help improve the quality of life for people who experienced a natural disaster (Habib et al., 2013; Jeong et al., 2016).

Summary

Within this critically appraised topic paper, 13 articles were reviewed thoroughly. The articles included topics on occupational therapy's role (Cahill et al., 2020; Ching & Lazaro, 2021; Habib et al., 2013; Jeong et al., 2016; Rashad et al., 2022), natural disaster's impact (Bacon et al., 2017; Duque et al., 2012; Hidalgo & Baez, 2019; Jeong et al., 2016; Makwana, 2019; Parente et al., 2017; Scaffa et al., 2006), occupational performance (Bacon et al., 2017; Hikichi et al., 2020; Jeong et al., 2016; Pizzi, 2015; Scaffa et al., 2006), interventions (Arbesman et al., 2013; Bondoc & Ching, 2015; Cahill et al., 2020; Jeong et al., 2016; Parente et al., 2017; Rashad et al., 2022; Scaffa et al., 2006), occupational deprivation (Bacon et al., 2017; Hikichi et al., 2020; Jeong et al., 2016; Makwana, 2019), and recovery (Jeong et al., 2016; Makwana, 2019; Parente et al., 2017; Pizzi, 2015; Rashad et al., 2022; Scaffa et al., 2006; Shin & Ji, 2021). The following main points were discovered:



- The role of occupational therapy practitioners in working with those who experience a natural disaster the evaluate how the person interacts with their environment and providing the appropriate interventions (Rashad et al., 2020).
- Interventions may become limited due to natural disasters, but occupational therapists have the knowledge to meet the needs of the clients who achieve goals within their environment (Parente et al., 2017; Scaffa et al., 2006).
- Quality of life can be impacted for persons who have experienced a natural disaster and occupational therapists play a role in reestablishing/facilitating the clients meaningful occupations (Rashad et al., 2020).
- Reviewing available literature through the lens of the PEO model (Baptiste, 2017), revealed the transaction between the person and environment was drastically impacted due to natural environments.
- The review of the available material on this topic indicated a need for further research to look at how occupational therapists can improve the quality of life for persons who have been impacted by a natural disaster (Rashad et al., 2022).

Clinical Bottom Line

What are the roles of occupational therapists who provide interventions for improving quality of life and occupational participation for individuals following a natural disaster?

In order to understand more on how occupational therapists play a role in natural disaster recovery, the Person-Environment-Occupation model (PEO), was utilized. The PEO model focuses on the person's physical, cognitive, affective, sensory and spiritual aspects and includes the environment's physical, social, cultural, virtual, and institutional aspects (Baptiste, 2017).

The roles of occupational therapists may be diverse but share a common goal of improving quality of life for individuals. Natural disasters have a significant impact on quality of life and occupational participation for individuals who experience a natural disaster (Jeong et al., 2016). Quality of life can be decreased when people are not able to process the aftermath of a natural disaster through the use of their culture or religion. Culturally and religiously relevant ceremonies are essential for survivors to express important practices and internal feelings (Jeong et al., 2016). If a natural disaster does not allow a person to carry out their cultural or religious ceremonies, the person's quality of life could consequently be negatively affected. Occupational therapists can provide opportunities for people impacted by natural disasters to practice cultural norms as it is imperative for people who have been affected by a natural disaster (Jeong et al., 2016).

People who experience a natural disaster will have significant strain on their health management regarding mental health, sensory needs, spiritual expression, leisure establishments, educational institutes, social participation, and activities of daily living (Duque et al., 2012; Rashad et al., 2022; Scaffa, 2006). Occupational therapists play a major role in disaster recovery through the use of interventions for improving mental health and resiliency, advocacy and coping strategies, helping people re-establish roles and their identity, and participating in valued occupations (Arbesman et al., 2013; Jeong et al., 2016; Rashad et al., 2022). Occupational therapists can create client-based programs that focus on mental health, resiliency, and coping strategies through the use of yoga, performing arts, stress management, mental health education, and play groups (Arbesman et al., 2013). Occupational therapists can also provide age-appropriate activities for children to engage in play as well as physical activities to promote leisure for adults who are impacted by natural disasters (Ching & Lazaro, 2021; Rashad et al., 2022). Although virtual and institutional environments are not prominent in the literature about



natural disaster recovery, occupational therapists could use these environments to increase the quality of life of people affected by a natural disaster and should be researched further.

Occupational therapists can collaborate with other health care professionals such as first responders and disaster management teams (Jeong et al., 2016). Occupational therapists play an essential role in providing support from a multidisciplinary perspective within the early stages of disaster recovery to help manage stress for those affected by a natural disaster (Parente et al., 2017). Occupational therapists will also be able to refer people affected by natural disasters to other healthcare professionals such as physical therapy, mental health psychologists and support groups to meet the needs of people affected that are outside of occupational therapy's scope.

The literature that has been analyzed can assist to further the integration of occupational therapy practice into disaster contexts to improve the quality of life of individuals affected by a natural disaster. However, more research is needed in order to better understand how natural disasters affect specific populations and types of disasters from an occupational therapy lens. . Overall, occupational therapists can contribute to improving quality of life and occupational participation for individuals following a natural disaster by creating client-based programs that focus on mental health, resiliency, and coping strategies.



References

- American Occupational Therapy Association. (2020). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, 74(Suppl. 2), 7412410010. <https://doi.org/10.5014/ajot.2020.74S2001>
- Arbesman, M., Bazyk, S., & Nochajski, S. M. (2013). Systematic review of occupational therapy and mental health promotion, prevention, and intervention for children and youth. *American Journal of Occupational Therapy*, 67, e120–e130. <https://doi.org/10.5014/ajot.2013.008359>
- Bacon, C. M., Sundstrom, W. A., Stewart, I. T., & Beezer, D. (2017). Vulnerability to cumulative hazards: coping with the coffee leaf rust outbreak, drought, and food insecurity in Nicaragua. *World Development*, 93, 136-152. <https://doi.org/10.1016/j.worlddev.2016.12.025>
- Baptiste, S. (2017). The person-environment-occupation model. In J. Hinojosa, P. Kramer, & C. B. Royeen (Eds.), *Perspectives on human occupation: Theories underlying practice* (2nd ed., pp. 137-159). F. A. Davis Company.
- Bondoc, S., & Ching, P. (2015). Occupational therapy in disaster risk reduction and response: A case study in the Philippines. *The American Journal of Occupational Therapy*, 69(Supplement_1), 6911515149p1-6911515149p1. <https://doi.org/10.5014/ajot.2015.69S1-RP203A>
- Cahill, S. M., Egan, B. E., & Seber, J. (2020). Activity and occupation-based interventions to support mental health, positive behavior, and social participation for children and youth: A systematic review. *American Journal of Occupational Therapy*, 74, 7402180020. <https://doi.org/10.5014/ajot.2020.038687>
- Ching, P. E., & Lazaro, R. T. (2021). Preparation, roles, and responsibilities of Filipino occupational therapists in disaster preparedness, response, and recovery. *Disability and Rehabilitation*, 43(9), 1333-1340. <https://doi.org/10.1080/09638288.2019.1663945>
- Duque, R. L., Ching, P. E., & Amihan-Bayas, C. (2012). Occupational therapy within layers of disasters, poverty and conflict: A case study. *World Federation of Occupational Therapists Bulletin*, 66(1), 24-26. <https://doi.org/10.1179/otb.2012.66.1.009>
- Habib, M. M., Uddin, M. J., Ur Rahman, S., Jahan, N., & Akter, S. (2013). Occupational therapy role in disaster management in Bangladesh. *World Federation of Occupational Therapists Bulletin*, 68(1), 33-37. <https://doi.org/10.1179/otb.2013.68.1.010>
- Hikichi, H., Aida, J., Matsuyama, Y., Tsuboya, T., Kondo, K., & Kawachi, I. (2020). Community-level social capital and cognitive decline after a natural disaster: A natural experiment from the 2011 Great East Japan Earthquake and Tsunami. *Social Science & Medicine*, 257, 111981. <https://doi.org/10.1016/j.socscimed.2018.09.057>
- Jeong, Y., Law, M., DeMatteo, C., Stratford, P., & Kim, H. (2016). The role of occupational therapists in the contexts of a natural disaster: A scoping review. *Disability and Rehabilitation*, 38(16), 1620-1631. <https://doi.org/10.3109/09638288.2015.1106597>
- Makwana N. (2019). Disaster and its impact on mental health: A narrative review. *Journal of Family Medicine and Primary Care*, 8(10), 3090-3095. https://doi.org/10.4103/jfmprc.jfmprc_893_19
- Parente, M., Tofani, M., De Santis, R., Esposito, G., Santilli, V., & Galeoto, G. (2017). The role of the occupational therapist in disaster areas: Systematic review. *Occupational Therapy International*, 2017. <https://doi.org/10.1155/2017/6474761>



- Pizzi, M. A. (2015). Hurricane Sandy, disaster preparedness, and the recovery model. *American Journal of Occupational Therapy, 69*(4). <https://doi.org/10.5014/ajot.2015.015990>
- Rashad, D. E., Zapf, S. A., & Groger, S. E. (2022). The opportunity for occupational therapy in pediatric disaster recovery. *American Journal of Occupational Therapy, 76*(4). <https://doi.org/10.5014/ajot.2022.48454>
- Sanderson, R. C., Gross, S., Sanon, J. G., & Janairo, R. (2016). Building resilience in children and their communities following disaster in a developing country: Responding to the 2010 earthquake in Haiti. *Journal of Child and Adolescent Trauma, 9*, 31–41. <https://doi.org/10.1007/s40653-015-0077-5>
- Scaffa, M. E., Gerardi, S., Herzberg, G., & McColl, M. A. (2006). The role of occupational therapy in disaster preparedness, response, and recovery. *American Journal of Occupational Therapy, 60*(6), 642-650. <https://doi.org/10.5014/ajot.2011.65S11>
- Shin, S. H., & Ji, H. (2021). Health risks of natural hazards and resilience resources: Evidence from a US nationwide longitudinal study. *Social Science & Medicine, 281*, 114110. <https://doi.org/10.1016/j.socscimed.2021.114110>

