

Occupational Therapy's Role in Disaster Management and Response:

A Systematic Review

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Abstract

Importance: Occupational therapy providers (OTPs) possess a unique scope of practice and skillset to support individuals, communities, and populations impacted by disasters. However, literature covering the roles and impacts OTPs can and do make in disaster management is limited.

Objective: To identify, evaluate, and synthesize the current literature concerning OTPs involvement in disaster management to determine the efficacy of OTPs in disaster preparation, response, and recovery.

Data Sources: A literature search was conducted between May 14th, 2026, and May 27th, 2026. Follow up searches were completed on May 28th, 2026. Databases included Academic Search Complete, CINAHL, and MEDLINE, using Hawai'i Pacific University's online library databases. Search terms included disaster, natural disaster, climate disaster, risk management, disaster management, disaster response, disaster risk management, disaster risk response, emergency management, crisis response, humanitarian response, occupational therapy, occupational therapist, and ot, as well as combinations of these terms.

Study Selection and Data Collection: This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Published studies on disaster management were included in the systematic review. Data from systematic reviews, scoping reviews, conference proceedings, non-peer reviewed literature, and dissertations were excluded.

Findings: Five studies were included (one Level II, two Level IV, and two Level V studies) according to the American Occupational Therapy Association's Levels of Evidence. The outcomes of these studies indicate that OTPs are most involved in the disaster recovery and rehabilitation phase, with less OTPs involved in the preparatory phase and response phase. Strong community networking among responding professionals and the individuals within disaster-impacted areas is a protective factor. Finally, occupation focused interventions are effective in supporting individuals during disaster recovery and rehabilitation.

Conclusion and Relevance: OTPs are effective contributors to disaster management in all stages of disasters, particularly in recovery and rehabilitation efforts, to offer support for individuals, communities, and populations impacted by disaster.

Key words: Disaster recovery, disaster response, disaster preparation, occupational therapy

Occupational Therapy's Role in Disaster Management and Response:

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Disaster is defined by the United Nations General Assembly (UNGA, 2016) and the World Federation of Occupational Therapy (WFOT, 2022) as a “serious disruption of the functioning of a community or society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human material, economic or environmental losses and impacts”. Disasters occur through four stages which are described by the disaster risk management cycle: prevention and mitigation, preparedness, response, rehabilitation and recovery (WFOT, 2022). Populations at greatest risk during the disaster cycle include vulnerable and marginalized groups: children and elderly, those with illness, disability, or chronic healthcare needs, individuals with cognitive impairment or mental illness, the socially disadvantaged or impoverished, and those with limited access to sanitation and appropriate nutrition (WFOT 2022). Disasters are dynamic and ongoing interactions between the conditions of a hazardous event and the characteristics of the affected community, with the potential for profound immediate and long-term impacts to individuals and communities, particularly in vulnerable populations who are at the highest risk.

Adverse outcomes of disaster include morbidity and mortality, infrastructure damage, economic instability, food insecurity, housing insecurity, social isolation, and disruption to roles and routines (UNDRR, 2020; WFOT, 2022). Survivors of disaster are at increased risk for adverse mental health outcomes (Ayik et al., 2025) and cognitive disruptions (Helton et al., 2011). Survivors of the 2010 Christchurch New Zealand earthquakes experienced cognitive disruptions which negatively impacted performance on Sustained Attention and Response Task (SART) twenty days after the main earthquake (Helton et al., 2011). University students directly

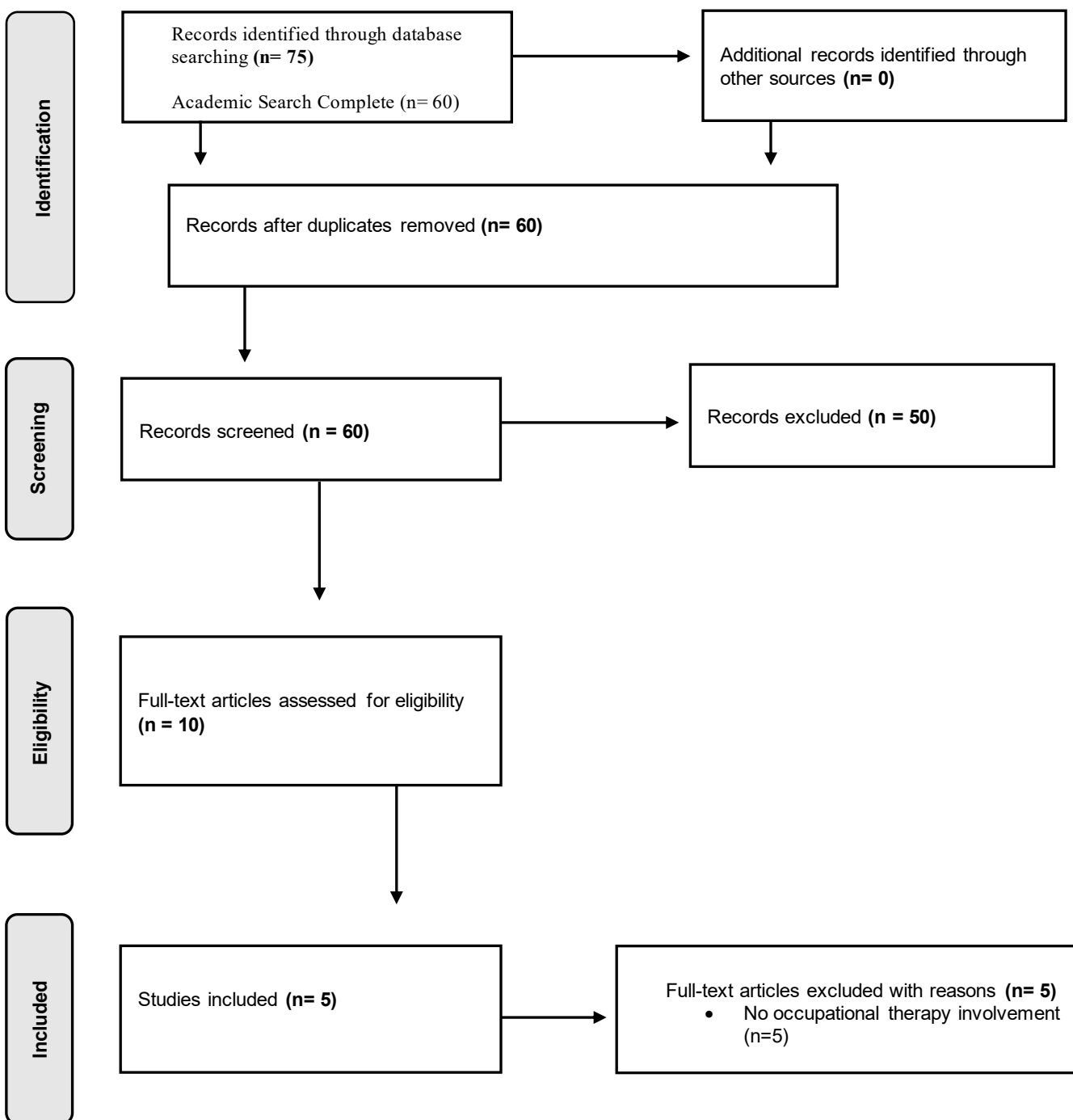
affected by the 2023 Turkey-Syria earthquakes had significantly higher levels of PTSD, depression, and anxiety when compared to peers without direct exposure (Ayik et al., 2025). Exposure to disaster can impact an individual's ability to engage in activities of daily living and instrumental activities of daily living (Rashud et al., 2022; Shiba et al., 2022; Tsuboya et al., 2017). Two years after Cyclone Yasi hit Australia in 2011, residents of an impacted community reported ongoing occupation disruption to valuable social and leisure occupations (Sima, 2017). Disasters have wide ranging immediate and long-term consequences on individual and community abilities to access and participate in health and wellness promoting occupations.

The OTPs client population has significant overlap with groups identified as most vulnerable in disasters, including children, elderly, and those with illness, disability, chronic healthcare needs, cognitive impairment, or mental illness (AOTA, 2020; WFOT, 2022). Additionally, OTPs have valuable expertise in areas relevant to disaster mitigation, including risk prevention, safety assessment, environmental modification, task adaptation, mental health, advocacy, and client education (AOTA, 2020). OTPs can support clients in developing skills and resources relevant to disaster preparedness and response, including executive functioning, social connections, and risk and injury prevention (AOTA, 2020; WFOT, 2022). OTPs are uniquely positioned to support vulnerable individuals through all phases of the disaster risk management cycle. However, there is limited documentation of the role OTPs play in disaster within the literature. The purpose of this systematic review is to examine and analyze the strength of the evidence for OTPs role and involvement in the disaster risk management cycle to support impacted individuals and communities.

Method

The systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and incorporated recommended processes for conducting a systematic review. The guiding research question for this systematic review was: What is the role of occupational therapy in public health for disaster management and response?

A broad search of the literature was performed between May 14th, 2026, and May 27th, 2026. An additional search was conducted May 28th, 2026, to ensure all relevant research was included. The inclusion criteria for studies in this systematic review were as follows: peer-reviewed, published in English, relevant to occupational therapy involvement in disasters, including disaster preparedness, disaster response, and/or disaster risk management, and dated between 2020-2026. Exclusion criteria, in addition to those studies that did not meet the inclusion criteria, included articles that were systematic reviews, scoping reviews, dissertations, and conference proceedings. Studies related to the COVID-19 pandemic disaster without additional disasters were excluded. A search for relevant literature was completed using electronic databases: CINAHL, Academic Search Complete, and MEDLINE through Hawai'i Pacific University's online library database. Search terms included disaster, natural disaster, climate disaster, risk management, disaster management, disaster risk management, disaster risk response, emergency management, crisis response, humanitarian response, occupational therapy, occupational therapist, and OT, as well as combinations of these terms. Appendix A provides the search terms used for this systematic review. The initial search included 75 articles related to the research topic (Figure 1). After duplicates were removed, 60 articles remained. One independent reviewer completed the screening and selection of the studies and assessed their quality, and three independent reviewers extracted the data.

Figure 1*Flow Diagram*

Results

Five studies met the inclusion criteria. The articles were assessed according to their risk of bias, level of evidence, and quality. This systematic review included five studies that contained relevant information regarding the role of occupational therapy in disaster risk management and response. The information from these articles was divided into three themes: disaster phases, community networking, and occupation focused disaster recovery intervention. An evidence table is provided in Appendix B. The Cochrane risk-of-bias guidelines were used to assess each article and are provided in Appendix C.

Disaster Phases

Two of the five studies discussed the role of OT involvement in stages of the disaster cycle. Both studies were Level IV studies (see Appendix B). The studies provide evidence that OTPs involvement in disaster management is greatest in the rehabilitation and recovery stage of the disaster cycle.

Ching and Lazaro (2021) utilized a descriptive cross-sectional survey of 24 Filipino OTPs with experience working in disaster response teams to investigate the roles of OTPs in disaster response, recovery, and preparation phases, including rates of pre-disaster training and education. The results show that the OTPs were most involved in the rehabilitation and recovery phase of disaster management, less involved with the emergency response phase, and had the least involvement during the disaster preparation phase. During the rehabilitation and recovery phase, the encouragement of connectedness and social interactions among survivors was noted as the most common role for OTPs involvement. The most frequent role for OTPs in the disaster preparedness phase was participation in disaster training, while providing mental health support services to disaster survivors was most common during the disaster response phase. This study

supports that OTPs have the greatest participation in disaster management efforts during the recovery and rehabilitation phase.

Estes and Rone-Adams (2025) investigated self-reported involvement of rehabilitation healthcare professionals including OTPs, physical therapy providers (PTs), and speech language pathologists (SLPs) within Florida, United States in disaster training and phases of disaster management. The results indicate participation in disaster training has a positive correlation of the OTPs likelihood to respond in local and non-local disasters. Most OTPs surveyed indicated they believe OTPs have a role in disaster management. The most frequent phase of involvement for OTPs surveyed was disaster recovery and rehabilitation. Ching and Lazaro (2021) had found OTPs to be least involved in the disaster preparation phase; however, Estes & Rone-Adams (2025) determined OTPs to have been least involved in the disaster response phase.

Limitations of these studies include small sample sizes (Ching & Lazaro, 2021) low-level study design and low survey response rates (Ching & Lazaro, 2021; Estes & Rone-Adams, 2025). One study collected 24 survey responses of 31 participants invited to participate (Ching & Lazaro, 2021); the other study received 403 responses of the 16,369 OTPs who were sent the survey. Self-reporting and participation biases may impact the outcomes reported. Each study focused on specific populations; Ching and Lazaro (2021) considered OTPs in the Philippines while Estes and Rone-Adams (2025) investigated OTPs and other rehabilitation health professionals in Florida, United States. These non-representative samples can impact generalizability of these findings.

Community Networking

Two of the five studies discussed the efficacy of social and communal networking on preserving and restoring occupational performance in the context of a disaster. Both studies were

Level V qualitative studies (see Appendix B). All studies provided evidence that social and communal networking are potential protective factors in the disaster management cycle (Flannagan et al., 2023; Huppatz et al., 2024).

Flannagan et al. (2023) utilized semi-structured interviews to evaluate perspectives of disaster management in 46 individuals employed in allied health, public safety, and disability advocacy professions in Minnesota. Seven out of nine OTPs indicated that interprofessional networking and communication are enablers to family-centered emergency preparedness. This finding was supported by other allied health professionals, public safety personnel, and disability advocates. One of the OTPs indicated that identifying a central person to coordinate interprofessional collaboration may further enable networking and communication.

Additional results showed that no OTPs surveyed identified a lack of education or training in supporting children with disabilities and their families as a barrier to their ability to support family center emergency preparedness. In contrast, other allied health professionals and public safety professionals reported this as a barrier. This indicates that compared to other professionals, OTPs have a unique knowledge and skillset to enable family centered emergency preparedness. This study determined that interprofessional networking and communication are supportive factors for family-centered emergency preparedness. The results of this study determined allied health professionals including OTPs, emergency response professionals, and advocates perceive interprofessional networking and communication to enable family-centered emergency preparedness.

Huppatz et al. (2024) conducted a qualitative secondary analysis of 13 narratives from Australians impacted by bushfire, drought, flood, and the COVID-19 pandemic, which were published in the book: *Doing Our Best: Individual and Community Responses to Challenging*

Times. The participants reported short- and long-term impacts related to disaster experience. Participants indicated that social support, collaboration, community connections, and access to resource sharing networks are supportive factors to restoring meaningful occupational participation in disaster affected individuals and communities.

Limitations of these studies include small sample sizes, sampling methodology, and low-level study design (Flannagan et al., 2023; Huppatz et al., 2024). The results were based on subjective reporting, and risk objectivity due to reporting biases. (Flannagan et al., 2023; Huppatz et al., 2024). Flannigan et al. (2023) included nine OTPs in Minnesota, United States, and Huppatz et al. (2024) included 13 narrative experiences from individuals impacted by disaster. The samples are small and non-representative, which could impact reproducibility and generalizability of these findings.

Occupation Focused Disaster Recovery Intervention

One study discussed the efficacy of a group intervention program targeting activities and participation for older adults living in Japan who were affected by the Great East Japan Earthquake in 2011. This was a Level IIB quasi-experimental study using two non-randomized groups. The study provided evidence that this program which focused on activities and participation is effective and potentially beneficial for adult survivors of disaster.

Miyadera et al. (2020), conducted a 14-week study comparing a community based occupational focused intervention program with a standard community exercise program for older adults impacted by the 2011 earthquake. The activities and participation group attended lecture and discussion on topics that included roles, habits, performance capacity, values, and environment, followed by practice sessions focused on applying learned principles to planning and executing activities for personal health. The exercise group followed an exercise program

designed based on the Ministry of Health, Labor, and Welfare in Japan. Program outcomes were evaluated by the ability to impact health related quality of life through the Short-Form 36, challenges of daily living measured with the Occupational Self-Assessment, and measures of physical function including grip strength and one-leg stand time test. The activities and participation experimental group had a greater change score for the general health section of SF-36 compared to the exercise group. Additionally, members of the experimental group scored a higher-change score on OSA item 9: “the things I need to be productive,” and item 13: “places I can go to enjoy myself”. There was no difference found between groups for physical function measurements. Use of occupation-based interventions in a community setting such as this activities and participation program is effective and provides potential benefits to older adults impacted by disaster.

Limitations to this study include lack of randomization and participant’s self-selection, owing to a potential self-selection bias (Miyadera et al. 2020). Additionally, a baseline difference between groups was noted, with the control group scoring significantly higher than the experimental group on OSA item 9: “the things I need to be productive”. The focus of one population impacted by a single disaster event may impact the generalizability of the study outcomes.

Discussion

The results of this systematic review suggest that OTPs may be effective in supporting individuals and communities during all stages of the disaster risk management cycle, particularly during the disaster rehabilitation and recovery phase; however, the results regarding OTPs involvement in the preparedness and emergency response phases were inconclusive. Additional results of this systematic review suggest that occupation focused group interventions may be an

effective strategy in the disaster rehabilitation and recovery phase, and initiatives to support social and community engagement have suspected protective factors. Between 2000-2019, 7,348 disaster events were reported through the international EM-DAT database, resulting in 1.23 million lives lost and impacting more than 4 billion people (UNDRR, 2020). National and international disaster tracking initiatives have indicated a dramatic acceleration in the frequency of disaster events recorded from 1980 to present day (NOAA, 2025; UNDRR, 2020). As the rate of disasters intensifies, identifying effective personnel and strategies to assist in disaster risk management could benefit billions of people.

The rehabilitation and recovery phase of the disaster risk management cycle describes the long-term efforts of restoration in the disaster-affected community (WFOT, 2022). The rehabilitation and recovery phase involves repairs to damaged infrastructure, and restoring or improving areas of physical, mental, social, cultural, economic, and occupational wellbeing (WFOT, 2022). These results suggest that during the disaster risk management cycle, OTPs are most engaged with the rehabilitation and recovery phase (Ching & Lazaro, 2021; Estes & Rone-Adams, 2025).

In the initial aftermath of disaster, communities may experience short-term social resilience; however, disasters pose as significant long-term social disruptors (Huppatz et al., 2024; Shiba et al., 2022; Sima et al., 2017). Challenges to social connections during and after disaster are caused by various reasons which include destruction of community gathering sites, displacement, death of friends or family members, and increased time requirements related to cleanup and repairs (Huppatz et al.; Shiba et al., 2022; Sima et al., 2017). While social connections are frequently disrupted in cases of disaster events, they also serve as important protective factors, particularly for vulnerable populations (Flannagan et al., 2023; Huppatz et al.,

2024). Additionally, interprofessional communication networks which include OTPs, emergency response personnel, and other allied health professionals support recovery and rehabilitation efforts. OTPs support community connectedness and social interactions amongst survivors, particularly during the recovery and rehabilitation phase (Ching & Lazaro, 2021). These results support that OTPs may play an important role in fostering social resilience and community rebuilding, enabling better outcomes of disaster events.

Disasters can create or exacerbate barriers to accessibility by disrupting access to essential resources, services, transportation, and familiar environments (Miyadera et al. 2020; UNDRR, 2020; WFOT, 2022). Addressing accessibility is a central component of occupational therapy practice (AOTA, 2020). The findings of this review support the potential value of community-based, occupation-focused interventions that promote participation, accessibility, and engagement in meaningful activity during disaster recovery and rehabilitation. Such interventions may help individuals and communities re-establish routines, reconnect with values occupations, and rebuild participation in everyday life following a disaster event.

Strengths and Limitations

Strengths of this systematic review include adherence to PRISMA guidelines and use of the PRISMA flow diagram to enhance transparency of the research process. Limitations to this review include low number of relevant articles identified and low levels of evidence across included studies, restricting generalizability of these findings. The thematic grouping of studies was a subjective process completed by one researcher and risks unintentional researcher bias. Additionally, there is a possibility that other relevant articles may exist but were not identified by the researcher during the search process.

Implications for Occupational Therapy Practice

OTPs are effective members of disaster risk management initiatives, providing valuable insight and assistance. Disasters can result in long term occupational disruption, including social disruptions.

- Although this study provides evidence supporting OTPs role in disaster recovery and rehabilitation, it is imperative to further examine the OTPs contribution in other phases of the disaster risk management cycle.
- There is an ongoing need for the development and systematic study of interventions which can be used in disaster risk management.
- There is evidence that professional participation in advanced disaster training and education improves rates of OTPs involvement in the disaster risk management cycle (Estes & Rone-Adams, 2025). Further investigation into the effectiveness of advanced disaster training initiatives is needed.

Conclusion

Studies included within this systematic review provide evidence for the effectiveness of the role of OTPs in disaster risk management, particularly in the recovery and rehabilitation phase. OTPs have training in areas relevant and applicable to disaster risk management, such as promoting social and community engagement, environmental adaptations, and addressing barriers of accessibility. Further research is necessary to develop and investigate the effectiveness of specific intervention guidelines in disaster risk management. Additionally, research into the roles and impacts of OTPs in other stages of the disaster risk management cycle remains unclear and requires further study.

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Appendix A*Systematic Review Search Terms*

Disaster or natural disaster or climate disaster

AND

risk management or disaster management or disaster response or disaster risk management or disaster risk response or emergency management or crisis response or humanitarian response

AND

occupational therapy or occupational therapist or ot

Appendix B

Evidence Table for Role of OT in Disaster Risk Management

Author/Year	Level of Evidence Study Design Risk of Bias	Participants Inclusion Criteria Study Setting	Intervention and Control Groups	Outcome Measures	Results
Ching & Lazaro (2021) https://doi-org.hpu.idm.oclc.org/10.1080/09638288.2019.1663945	Level 4 Descriptive Cross Sectional Survey <i>Risk of Bias:</i> Moderate	<i>Participants</i> N=24 (83% Female) <i>Inclusion Criteria</i> Licensed OTPs verified through the Filipino national registry, member of disaster response teams in 2012–2013 based on records from the Philippine Academy of Occupational Therapists, with field experience in disaster response, and able to read and understand survey questions in English. <i>Study Setting</i> Philippines, virtual survey	Participation in a three-part, survey questionnaire. Part one of the survey consisted of demographic data. Part two involved a 23-items questionnaire using a 5-point Likert scale scoring system. Part two was organized into 7 items on pre-disaster, 10 items on disaster response, and 6 items on rehabilitation and recovery. Part three allowed open-ended responses to five questions related to any preparation and training taken prior to disaster deployment.	<i>Education and Training</i> Self-reported rates of participation in advanced disaster education and training. <i>Roles and Responsibilities</i> Self-reported roles and responsibilities during the preparedness phase, response phase, and the rehabilitation and recovery phase of disaster.	The OTPs surveyed were most frequently involved in the rehabilitation and recovery phase of disaster, and least involved in the preparedness phase. The most common role in disaster the rehabilitation and recovery phase were the encouragement of connectedness and social interactions among survivors. The most common role in disaster preparedness phase was attending trainings in disaster response. The most common role identified in disaster response phase was providing mental health services to survivors.
Estes & Rone-Adams (2025)	Level 4	<i>Participants</i>	Participation in cross sectional survey study.	<i>Healthcare Practitioner</i>	Findings indicated a significant correlation exists between

	Quantitative Cross Sectional Survey <i>Risk of Bias:</i> Moderate	N=796 (M=43.6 years; 83.1% Female) Allied Healthcare Professionals • OTPs (N= 403) • PTs (N= 241) • SLPs (N= 152) <i>Inclusion Criteria</i> Florida-based OTPs, PTs, and SLPs, aged 18 to 65 years and holding an active professional license, registered with the Florida Department of Public Health, and responded to emailed survey. <i>Study setting:</i> Florida, virtual survey		<i>Disaster Management Questionnaire</i> • Self-reported participation in advanced disaster education and training • Self-reported involvement in phases of disaster preparedness, response, and recovery.	prior participation in disaster training and OTPs likelihood to respond to local and non-local disasters. Of OTPs surveyed, 72.4% believed OTPs have a roll in disaster management. Of OTPs surveyed, 62.3% had no disaster response training. Of OTPs surveyed, 16.1% had previous involvement in disaster preparedness, 14.6% had previous involvement in disaster emergency response, and 18.11% had previous involvement in disaster recovery.
Flanagan et al. (2023) https://doi.org/10.1186/s12889-023-15580-4	Level 5 Exploratory Qualitative Study <i>Risk of Bias:</i> Moderate	<i>Participants</i> N=46 (Mean age, 41.7; 73.9% female) Allied Healthcare Professionals • OTPs (N=9; Mean age, 43.0, 89.0% female)	Participation in a semi-structured interview. Two researchers conducted individual interviews through Zoom. The interview guide consisted of 8 questions for health care professionals, 7 questions for public safety	<i>Professional Perspectives</i> Interview responses from health care professionals, public safety personnel, and disability	No OTPs surveyed identified their education and training on supporting the needs of families of children with disabilities as a barrier to family centered emergency preparedness.

		• Social Workers (N=10) • Nurses (N=10) Members of Disability Advocacy (N=7) Public Safety Personnel • Fire Marshal (N=1) • Police Officer (N=1) • Emergency Medical Services (N=3) • Emergency Management or Community Management Preparedness (N=5) <i>Inclusion Criteria:</i> Healthcare professionals, disability advocates, and public safety personnel who work in Minnesota, speak English, and have been in their role for at least 6 months <i>Setting:</i> Virtual interview	personnel, and 6 questions for disability advocates. Interviews lasted between 24 to 82 minutes, with a mean of 48 minutes.	advocates on how to enable these professionals' groups to support families of children with disabilities and chronic health conditions in emergency disaster preparedness and response.	There is a lack of awareness among health care providers around emergency preparedness, and lack of understanding from public safety personnel on distinct needs of children with disabilities and their families. Interprofessional networking and communication were identified as enablers to family-centered emergency preparedness. Lack of institutional support and funding were identified as barriers to family- centered emergency preparedness.
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Huppatz et al. (2024) https://doi-org.hpu.idm.oclc.org/10.1080/14427591.2024.2394158	Level 5 Qualitative Secondary Analysis <i>Risk of Bias:</i> High Risk	<i>Participants</i> N=13 Narrative Topics • COVID19 (N=7) • Bushfire (N=3) • Drought (N=2) • Flood (N=1) <i>Inclusion Criteria:</i> Narratives of Australians published in the book, <i>Doing Our Best: Individual and Community Responses to Challenging Times</i> (2022). <i>Setting:</i> Various communities in disaster-affected regions of Australia.	A qualitative analysis guided by the participatory occupational justice framework to determine long-term occupational disruption in Australians impacted by tragedies including bushfires, drought, severe hailstorms, floods, and the COVID-19 pandemic.	Perspectives and insights of how occupational participation was affected because of various disasters, as well as the impact of the COVID-19 pandemic, in communities throughout Australia from 2019-2022.	Natural disasters and the COVID19 pandemic increased risk of occupational deprivation, with both immediate and long term impacts. Social support, collaboration, community connections, and resource sharing networks were identified as supportive factors for restoration of meaningful occupational participation.
Miyadera et al. (2020) https://doi-org.hpu.idm.oclc.org/10.1080/03601277.2020.1835144	Level 2B Quasi-experimental, two-group nonrandomized <i>Risk of Bias:</i>	<i>Participants</i> N= 78 Experimental Group N=42 (Mean age 74.3, 69.0% female) Control Group N=38 (Mean age 77.1, 80.0% female) <i>Inclusion Criteria:</i>	<i>Intervention: Activities and Participation (n=42).</i> 14 sessions, 14-week program facilitated by 6 OTPs. Session 1 consisted of an orientation and initial assessments. Sessions 2-9 consisted of the learning portion, with lecture and discussion on	<i>Health Related Quality of Life:</i> Short-Form 36 <i>Challenges of Daily Living:</i> Occupational Self-Assessment <i>Physical Function:</i>	The experimental group had a significantly greater increase to general health score on SF-36 ($p<.001$) with moderate effect size. There was a significantly greater change score for experimental group on item 9, “the things I need to be

	Moderate	Aged 65 years or older and have settled in permanent post-disaster housing in M City Fukushima Prefecture after leaving temporary housing or a relative's house following the 2011 earthquake. <i>Intervention Setting:</i> Community group programming	the following topics: interests, roles, habits, performance capacity, personal causation, values, and environment. Participants received supplementary homework assignments after lecture sessions. Sessions 10-13 consisted of the practice portion, with focus on planning and executing activities for personal health. Session 14 consisted of a completion ceremony and final assessment. <i>Control Group: Body Functions and Structures (n= 36).</i> 14 sessions, 14-week exercise program designed based on the Ministry of Health, Labor, and Welfare in Japan. The program was facilitated by OTPs, physical therapists, and speech-hearing therapists. Sessions consisted of physical exercise and lectures on topics of body structures. Participants were assigned	• Grip strength • One-leg stand time • Timed up-and-go test • 5-m walking time test	productive,” ($p<.001$) and on item 13, “places I can go and enjoy myself,” of the OSA. No significant difference between groups for physical function measures.
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			additional home-based exercises to complete between sessions.		
<i>Note.</i> Acronyms used OT = Occupational therapy OTPs = Occupational therapy providers SLPs = Speech language pathology providers PTs = Physical therapy providers					

Appendix C

Risk-of-Bias Table for RCT and Two or More Group Design for Role of OT in Disaster Risk Management

Risk-of-Bias Table for Randomized Controlled Trial (RCT) and Non-RCT (Two of More Group Design)										
	Selection Bias (Risk of bias arising from randomization process)			Performance Bias (effect of assignment to intervention)		Detection Bias		Attrition Bias	Reporting Bias	Overall risk-of-bias (low, moderate, high)
Citation	Random Sequence Generation	Allocation Concealment (until participants enrolled and assigned)	Baseline difference between intervention groups	Blinding of Participants During the Trial	Blinding of Study Personnel During the Trial	Blinding of Outcome Assessment: Self-reported outcomes	Blinding of Outcome Assessment: Objective Outcomes (assessors aware of intervention received?)	Incomplete Outcome Data (data for all or nearly all participants)	Selective Reporting (results being reported selected on basis of the results?)	
Miyadera, et al., (2020)	-	-	-	-	-	+	-	+	+	Moderate
<i>Note.</i> Categories for risk of bias are as follows: Low risk of bias (+), unclear risk of bias (?), high risk of bias (–). Scoring for overall risk of bias assessment is as follows: 0–3 minuses, low risk of bias (L); 4–6 minuses, moderate risk of bias (M); 7–9 minuses, high risk of bias (H). Citation. Table format adapted from Higgins, J. P. T., Sterne, J. A. C., Savović, J., Page, M. J., Hróbjartsson, A., Boutron, I., . . . Eldridge, S. (2016). A revised tool for assessing risk of bias in randomized trials. <i>Cochrane Database of Systematic Reviews</i> 2016, Issue 10 (Suppl. 1), 29–31. https://doi.org/10.1002/14651858.CD201601										

Table 3

Risk-of-Bias Table for Before-After Studies with No Control Group for Role of OT in Disaster Risk Management

Risk of Bias for Before-After (Pre-Post) Studies with No Control Group (One Group Design)												
Citation	Study question or objective clear	Eligibility or selection criteria clearly described	Participants representative of real-world patients	All eligible participants enrolled	Sample size appropriate for confidence in findings	Intervention clearly described and delivered consistently	Outcome measures pre-specified, defined, valid/reliable, and assessed consistently	Assessors blinded to participant exposure to intervention	Loss to follow-up after baseline 20% or less	Statistical methods examine changes in outcome measures from before to a fter intervention	Outcome measures were collected multiple times before and after intervention	Overall risk of bias assessment (low, moderate, high risk)
Ching, P. E., Lazaro, R. T. (2021)	Y	Y	N	N	N	Y	Y	N	N	N	N	M
Estes, Rone-Adams (2025)	Y	Y	N	N	Y	Y	Y	N	N	N	N	M
Flanagan et al., (2023)	Y	Y	N	N	N	Y	Y	N	N	N	N	M
Huppatz et al., (2023)	Y	Y	N	Y	N	N	N	N	N	N	N	M

Note. Y = yes; N = no; NR = not reported. Scoring for overall risk of bias assessment is as follows: 0–3 N, Low risk of bias (L); 4–8 N, Moderate risk of bias (M); 9–11 N, High risk of bias (H).

Citation. Table format adapted from National Heart Lung and Blood Institute. (2014). Quality assessment tool for before–after (pre–post) studies with no control group. Retrieved from <https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>