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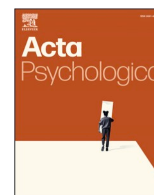

Protocols and strategies to use emergency psychology in the face of an emergency: A systematic review

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A R T I C L E I N F O

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A B S T R A C T

Background: Trauma survivors are at a high risk of developing mental health problems. Hence, mental help in the form of emergency psychology has to be availed in the aftermath of a traumatizing event. When studied in-depth, emergency psychology comprises protocols, strategies, and techniques that establish it as an interventional activity.

Objective: The main of this review is to analyze how emergency psychology services are provided to people, to verify to what extent these interventions are homogeneous in the delivery methods and consequently, facilitate the creation of relevant measures. Consequently, the general view of emergency psychology is reviewed and analyzed to identify the protocols, guidelines, and strategies used.

Methods: A search was done on the ScienceDirect, APA PsycINFO, Emerald, and Scopus databases for articles published from 1st January 2017 to 1st April 2022. The reference lists of the identified studies were also screened.

Results: After the non-duplicate articles were removed and after filtering the articles according to inclusion criteria, 20 articles were included for the thematic analysis: nine research articles, 10 case study reports, and one randomized controlled trial (RCT). During the analysis, different aspects of emergency psychology were categorized: Responders, Crisis Management and Structure, and types of psychological interventions. This categorization led to the identification of protocols, guidelines, and strategies that can be placed in a sequence to give a general direction of how an emergency psychology intervention is supposed to be carried out.

Conclusions: The adopted protocols, guidelines and strategies may vary from one disaster management to another but the main goal will always remain the same.

According to literature, disasters can be defined as events that disrupt normal personal and social life caused by human actions and/or natural forces, with large-scale impacts on humans, environments and societies (Xu & Lo, 2022). The prevalence of events such as wars, nuclear disasters, famine, cyclones, hurricanes, wildfires, accidents, tornadoes, floods, and earthquakes has increased over the years (Altun, 2019; Dookie & Osgood, 2021). This increase can logically lead to a rise in the number of deaths and people affected. For example, in the year 2020, 8200 deaths due to natural catastrophes were reported (Insurance Information Institute, 2020). The number of those left physically alive but mentally shaken is even higher. A memorable example is the 2004 Indian Ocean tsunami which had 275,000 survivors (Teugels & Vandewalle, 2006; Neuner et al., 2009). These people are at a higher risk of developing post-traumatic stress disorder (PTSD), which is usually accompanied by anxious and depressive symptoms (Angenendt, 2014; Dieltjens et al., 2014; Dückers et al., 2017; Hechanova et al., 2016). Angenendt (2014) reported that 5–30 % of disaster survivors develop intermittent and chronic psychiatric symptoms. Such disorders can cause a ripple effect, affecting the individual's everyday life by causing emotional and mental impairments (Dückers et al., 2017).

To prevent this, governments, NGOs, and the concerned stakeholders facilitate the administration of psychological support in the aftermath of a catastrophe (Altun, 2019; Hechanova et al., 2019; Roberts et al., 2019). However, to be effective, these psychological interventions should be delivered following high standards and, for this reason, led by emergency psychologists, nurses, paramedics, and volunteers skilled in psychotraumatology (Epping-Jordan et al., 2015; Rossi et al., 2021). These mentally stabilizing interventions are related to the field of emergency psychology (Cervellione et al., 2021; Réseau National d'Aide Psychologique d'Urgence [RNAPU], 2022), and they are created and

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carried out considering the person's personal, religious and cultural beliefs (Cervellione et al., 2021; Rossi et al., 2021).

Emergency psychology could be defined as the immediate and post-immediate psychosocial and spiritual support given to the trauma victims, their family members, close circles as well as witnesses of a distressing and traumatizing event (CROSS, 2022; RNAPU, 2022. In this light, psychological first aid (PFA), psychosocial services (PSS), and spiritual support (SS) offered in the immediate and post-immediate aftermath of a disaster can all be considered as emergency psychology interventions (Corey et al., 2021; Lee et al., 2016; Roberts et al., 2019; Sim & Wang, 2021). The in-between differences between PFA, PSS, and SS are minor (Inchausti et al., 2020; Gilbert et al., 2021). For instance, PFA integrates the aspects of behavioral, mental health, and stress first aid for disaster survivors (Miller et al., 2021; Tol et al., 2011; Ventevogel, 2018). PSS is more community-based and aims to improve the social and community support given to victims of a traumatic event (Schininà & Tankink, 2018). On the other hand, SS interventions help victims, working through their beliefs, personal creed, and existential and spiritual questions (Lee et al., 2016; Harris et al., 2018). All the above-mentioned "forms" of emergency psychology have been endorsed and praised by mental health experts and stakeholders through conferences and research papers (Tol et al., 2011; Hobfoll et al., 2007).

As we step deeper into the field of emergency psychology, we can see that there are protocols, strategies, and techniques that establish emergency psychology as an interventional activity. Some of these strategies and techniques are basic one-on-one counseling sessions (van Ommeren et al., 2005; Ventevogel et al., 2015), community-based social support groups (Epping-Jordan et al., 2015), and mass education about mental health. (Epping-Jordan et al., 2015; Ventevogel et al., 2015). Despite varying from one disaster management to another, these activities can positively impact the psychological state of disaster survivors.

For these reasons, the main aim of the current study is to analyze the more recent literature, identifying psychological interventions that can support crisis victims and their main characteristics.

1. Objectives and research question

All protocols and strategies used should produce the same desired effect when it comes to the mental health of victims. However, the efficacy and application of one intervention style, may vary among disaster groups according to their differences in cultural, spiritual, and personal traits. For these reasons, it is important to carry out a systematic review to analyze how emergency psychology services are provided to people, to verify to what extent these interventions are homogeneous in the delivery methods and consequently, facilitate the creation of relevant measures. Here, a more extensive scope of emergency psychology is reviewed and analyzed to establish the protocols, guidelines, and strategies that have been used in the literature to date.

1.1. Research question

What are the protocols and strategies managed and used by professionals to provide emergency psychology services in the last five years?

2. Search methods

2.1. Eligibility criteria

Articles published from the 1st January 2017 to 1st April 2022 and written in the English language were eligible.

2.2. Search criteria and information sources

The findings of the present review were reported in line with the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines (Page et al., 2021). Databases such as ScienceDirect, APA PsycINFO, Emerald, and Scopus were used to search for articles published from 1st January 2017 to 1st April 2022. The reference lists of the identified studies were also screened. Similar keywords were used in generating search strings in the index databases (Table 1). The search strings were optimized for each database.

2.3. Inclusion criteria

The articles had to be published in peer-reviewed journals and in the English language. Only scientific papers reporting on the psychological services and the strategies used to manage and implement them in the aftermath of a disaster or catastrophe were considered.

2.4. Exclusion criteria

Systematic reviews, meta-analyses, non-journal papers, conference proceedings, letters to authors, comments on published articles, and the grey literature in general were excluded.

3. Review methods

3.1. Assessment of methodological quality

The critical appraisal tool used here is an adaptation and miniaturization of the qualitative studies checklist in the Best Bets Critical Appraisal Worksheets (Best Bets, n.d.; Temple University, 2014). The checklist was primarily developed for qualitative studies and, thus, had to be modified to accommodate other study types. The assessment tools used are clarity of study objective(s), suitability of study design, sample size justification, clarity in data collection, clarity of data analysis, clarity in the presented results, validity of results, and the literature value of results.

3.2. Study selection and data extraction

The current review followed two steps in selecting the studies. In the first step, authors screened independently the titles and abstracts of all retrieved studies, after duplicates removed. In the second step, they read independently the full-texts of the selected studies in order to assess articles for eligibility. More specifically, in order to proceed with more accuracy, the reviewers firstly coded 5 papers each (randomly chosen) and then, they revised together the data extracted from these ten articles. Discrepancies were resolved via joint review and discussion, and minor adjustments were made. After this preliminary step, the two authors divided the remained articles, coded them separately and checked their reference list for additional resources.

3.3. Data synthesis

In the datasheet, for each study, we extracted the following information: author, publication year, study design, study region, name or type of disaster, victim characteristics, characteristics of the psychological support, and the theme or objective of the study. Extracted data were then synthesized using a narrative approach in the Results section.

4. Results

4.1. Search results

The database search yielded a total of 2577 articles. Of these, 539 were identified from ScienceDirect, 157 articles from Emerald, 1767 articles from Scopus, and 104 articles from APA PsycINFO. Ten articles were identified from the screening of the reference list of identified studies. During the screening of the titles and the abstracts, 1508 duplicates and 941 articles were excluded. They were of the study

Table 1
Search strings.

Database	Search string
ScienceDirect	("emergency psychology" OR "psychological first aid" OR "emergency psychosocial" OR psychosocial OR "psychosocial emergency care") AND (calamity OR catastrophe OR disaster OR trauma OR cataclysm)
APA PsycINFO	("emergency psychology" OR "psychological first aid" OR "emergency psychosocial" OR psychosocial OR "psychosocial emergency care") AND (calamity OR catastrophe OR disaster OR trauma OR cataclysm)
Emerald	Year range: 2017–2022 ("emergency psychology" OR "psychological first aid" OR "emergency psychosocial" OR psychosocial OR "psychosocial emergency care") AND (calamity OR catastrophe OR disaster OR trauma OR cataclysm)
Scopus	TITLE-ABS-KEY (({emergency psychology} OR {psychological first aid} OR {emergency psychosocial} OR psychosocial OR {psychosocial emergency care}) AND (calamity OR catastrophe OR disaster OR trauma OR cataclysm))

methodology stated in the exclusion criteria and did not report about emergency psychology interventions. The remaining 128 articles were read in full. It was seen that only 20 completely agreed with the inclusion criteria. Fig. 1 illustrates this process.

4.2. Results of the quality appraisal

The assessment of the Methodological Quality shows that the majority of the studies (13/20) present clear objective(s) and suitability in the study design (12/20). Only 8 studies give a justification for the size of the sample enrolled and only half of the studies (10/20) reported the data collection procedure in a clear way. 13 studies clearly outline the data analysis procedure but in only 8 studies the results were clearly delineated. Finally, the majority of the studies (16/20) obtained valid results and 11 studies were also able to justify them with relevant literature (Table 2).

4.3. Results of the data extraction

Regarding the results of this review, Table 3 shows the data extracted from each paper included in this study: Authors, year of publication, country, type of crisis, study participants, type of psychological support, and main objectives of each study.

4.4. Characteristics of individual studies: a summary

The present systematic review included nine research articles, 10 case study reports, and one RCT article. One article studied general mental health strategies, five articles studied PFA, ten articles studied PSS, while article studied PFA in combination with PSS. The remaining two articles focused on disaster management systems. Nine articles included victims as study participants, while seven included responders. This enabled the analysis of data while taking both views into account.

4.5. Analysis and consistent themes

Thematic analysis, as described by Braun and Clarke (2006), was used to identify, assess and analyze the recurring themes across the included studies. The reports from the case studies and RCTS were evaluated alongside the included research articles' findings. This was done to check the protocols, guidelines, and strategies that had worked (in the case of case studies and RCTs) and those that were studied and reported to have a high probability of working (research articles). The qualitative analysis used here also considered first responders, especially mental health workers. The most common themes are presented in the following categories and sub-categories.

4.5.1. Responders

Some studies evaluated the importance of professional responders in managing and activating interventions of psychological support for victims and how their roles should be played. These studies are Choi (2019), Figueroa et al. (2022), Forbes et al. (2011), Guilaran and Nguyen (2020), Ha (2020), Xi et al. (2019), Manaois et al. (2020), and Stene et al. (2022).

4.5.1.1. Profession. In case of an emergency, the first responders are usually police, community leaders, religious leaders and social workers who are nearby (Manaois et al., 2020; Stene et al., 2022). However, in most cases these people cannot provide the required psychological care (Stene et al., 2022). Mental health specialists, including medical doctors, psychologists, psychiatrists, nurses, social workers, and counselors, usually step in later on (Ha, 2020).

4.5.1.2. Training. Proper training of mental health responders was considered a basic necessity. This helps in providing efficient

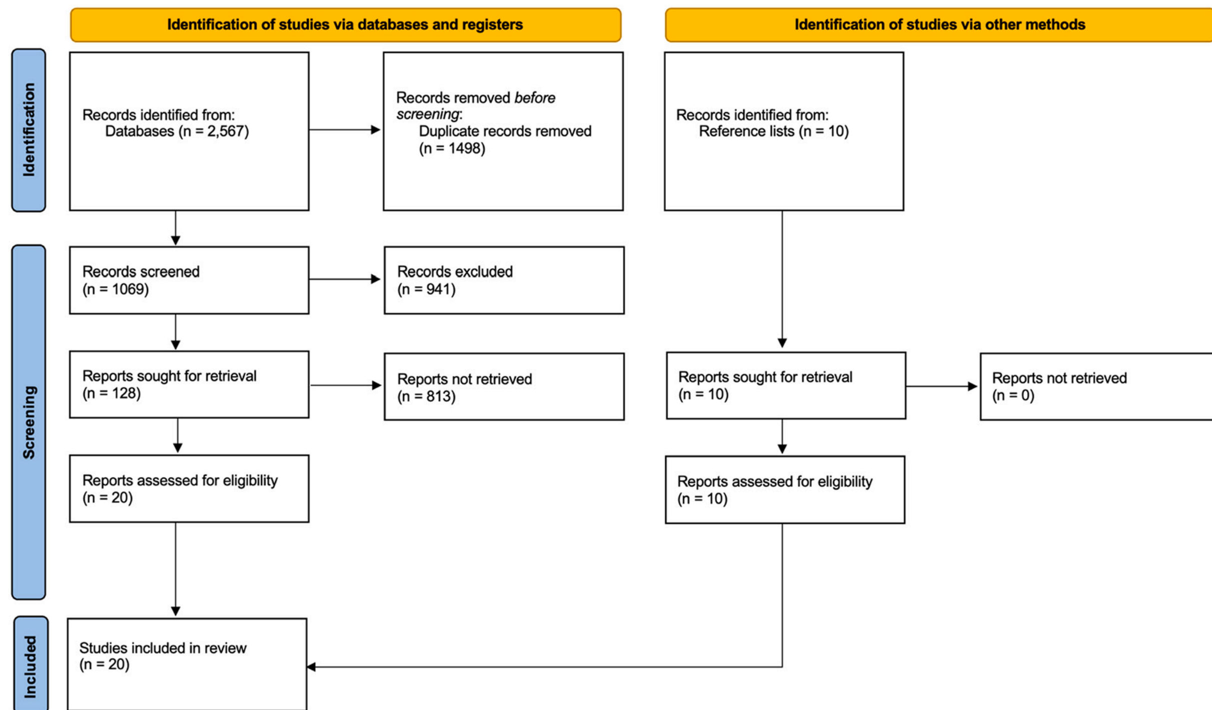

Fig. 1. PRISMA flow diagram of the study selection process.

Table 2
Results of the critical appraisal.

Author and year	Assessment item							
	Study objectives	Study design	Sample size justification	Data collection	Data analysis	Presentation of results	Validity of results	Literature value
Choi (2019)	○	●	○	●	●	○	●	○
Dückers et al. (2017)	●	○	●	○	●	●	●	●
Dückers et al. (2018)	●	○	○	●	●	○	●	○
Figueroa et al. (2022)	○	●	○	●	●	●	○	●
Forbes et al. (2011)	●	○	●	○	●	○	●	○
Foster et al. (2019)	●	●	○	●	○	●	●	○
Giarratano et al. (2019)	○	○	○	○	●	○	●	○
Guilaran and Nguyen (2020)	●	●	●	○	●	○	○	●
Ha (2020)	●	○	○	●	○	○	●	●
Xi et al. (2019)	●	●	●	○	●	○	●	○
KC et al. (2019)	●	●	○	○	○	●	●	●
Landa-Ramírez and Murillo-Cruz (2019)	○	●	●	○	○	○	●	●
Lee et al. (2018)	○	●	○	●	●	●	●	○
Lee et al. (2019)	●	●	○	○	●	○	○	●
Manaois et al. (2020)	○	●	●	○	●	●	●	●
Marahatta et al. (2017)	●	○	○	●	●	○	●	○
O'Donnell et al. (2020)	●	○	●	●	○	○	●	○
Seto et al. (2019)	●	○	○	○	●	●	○	●
Stancombe et al. (2022)	●	●	●	●	○	○	●	●
Stene et al. (2022)	○	●	○	●	○	●	●	●

Note. Black dots are those checked.

psychological care to disaster survivors and prevents mental health problems among responders (Choi, 2019; Figueroa et al., 2022; Forbes et al., 2011; Manaois et al., 2020; Xi et al., 2019). The appropriate policies and procedures should also be communicated regularly to all staff members at different levels of the response organizations (Forbes et al., 2011; Xi et al., 2019).

4.5.1.3. Provision of care and basic needs. The basic needs, such as food, shelter, clothing, and water, of responders should always be met (Figueroa et al., 2022; Manaois et al., 2020). This should happen during both on- and off-duty (Manaois et al., 2020). Although it may be hard for this to be provided during disaster management operations, studies like Guilaran and Nguyen (2020) recommended that first responders, including doctors and psychiatrists, should first take care of their needs and be comfortable. Simply put, "You cannot give to others what you don't have". Adequate financial compensation, i.e., salary and other benefits (Guilaran & Nguyen, 2020), was considered essential as well.

4.5.1.4. Psychological needs of first responders. When providing their services to disaster victims, mental health workers and psychologists are exposed to a lot of emotional trauma (Forbes et al., 2011; Ha, 2020; Manaois et al., 2020; Xi et al., 2019). Several measures, mostly similar to

Table 3
Study descriptors.

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
Qualitative studies								
Choi (2019)	Qualitative study	Korea	Fires, flooding, ferry accidents, or incidences of foot-and-mouth disease	Disaster health care workers	PFA	To investigate how disaster healthcare workers experience mental health and how disaster trauma programs can be tailored to meet their needs	Disaster health care workers' experiences of disaster mental health	Disaster health care workworn were found to experience lack of confidence, role confusion and helplessness; participants reported acute stress symptoms resulting from witnessing the devastating injuries and deaths of disaster victims or their colleagues
Foster et al. (2019)	Qualitative study	Australia	Critical child injury	Parents	PSS	To assess the psychosocial needs of parents looking after injured children, six months after injury had occurred	Parents experiences in the six months following their child's injury; parent's and family's needs during this time; how these needs were/not met and by whom	Parents report that their children's psychological wellbeing was the most challenging aspect of child injury; After 6 months post-injury parents' own mental health remained affected; Other family members, particularly siblings and partners also experienced mental and emotional strain related to children's emotional problem and/or caregiving and reintegration back into the family; parents reported a lack of adequate psychosocial resource for themselves and their child and family in the 6 months following child injury
Xi et al. (2019)	Qualitative case study	China	Wenchuan, Ludian, and Ya'an earthquakes, Kunming station attack, Beijing flood, Kashgar attacks, sinking of Dongfang zhi Xing (Eastern Star), Tianjin Explosion, Yumen plague	Mental health workers	Mental health crisis intervention (MHCI) system	To understand the response of mental health workers within the post-disaster mental health response system	Perceptions of mental health crisis interventions by Chinese mental health crisis worker and government administrators	Mental health teams should be integrated with emergency medicine systems; psychological support during crisis events should be conducted by multi-disciplinary teams; government departments of mental health should have disaster response guidelines; need of establishing a long-term tracking and rehabilitation plan for crisis victims

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Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
KC et al. (2019)	Qualitative case study	Nepal	2015 Nepal earthquake	Disaster survivors	PSS	To assess the activities done by organizations that support the psychosocial aspects of a community in post-disaster recovery	Impact of the earthquakes on the mental or psychological health of the communities; perception of received aid from organizations	Importance for organizations to understand the communities' mental health needs; need of improving preparedness capacity with community-based program; promoting resilience through religious and spiritual approach; improving leadership and governance of mental health related activities; promote effective risk communication through relevant information, before, during and after disaster
Ha (2020)	Qualitative study	Korea	Unspecified	Disaster victims in general	Disaster management	To compare the non-professional and professional management of psychological services during disasters	Psychological impact in the field of disaster management influencing by government policy, psychology specialists efforts, disaster victims' needs and local community support	A professional style of disaster management would be more effective in dealing with the psychological impact of disasters. Specifically the disaster management cycle should include four phases: disaster prevention and mitigation, disaster preparedness, disaster response, and disaster recovery
Quantitative studies								
Dückers et al. (2017)	Research article	Unspecified	Nonspecific	Crisis managers	PSS	To investigate crisis managers can strategically incorporate the principles of psychosocial support into crisis management	Intersection between crisis leadership and psychosocial support	A relation exists between PCM on the one hand and the well-being, functioning and the health of those affected on the other. This relation works in two direction: psychosocial support literature is interested in how psychosocial crisis management (PCM) influences the health of affects people; literature on crisis management stresses the implications of disaster health

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Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
								issues for the leader's position
Dückers et al. (2018)	Quantitative analysis study	European continent	Nonspecific	40 post-disaster mental health and psychosocial support programs	PSS	To quantitatively analyze the quality of 40 MHPSS programs	Participant characteristics, event characteristics, organizations involved in provision of programs, target groups/ beneficiaries, essential psychosocial principles, evaluation	The programs generally score high on involvement of trauma experts, local individuals, and politicians or government officials in the planning group; professional treatment for acute stress or referral; information meetings with the affected; stepped care; and conditions or facilities for communal, cultural, spiritual and religious healing practices. The scores are lower for program components such as a multi-agency planning group, coordination of (long-term) aftercare services, and the testing of psychosocial care plans.
Figueroa et al. (2022)	Randomized Controlled Trial (RCT)	Chile	Unspecified	Disaster survivors	ABCDE-PFA	To assess the effectiveness of protocols used in an original PFA model	PTSD symptoms, depression symptoms, self-reported distress change	PFA-ABCDE did not prevent the emergence of PTSD one month after a traumatic event compared to a control group; PFA-ABCDE was associated with higher emotional distress relief immediately after the intervention and lower self-reported PTSD symptoms one-month post-trauma. No effects were found on PTSD symptoms six months post-trauma
Forbes et al. (2011)	Research article	Unspecified	Unspecified	Unspecified	PFA	Development of a phased PFA model and improvements in the delivery of post-event PFA response	–	Pre-event: importance of having consistent organizational policies and procedures, PFA promotion and staff training; post-event: delivery of the post-event PFA response, monitoring and follow-up of staff
Giarratano et al. (2019)	Research article	United States	Community disasters after childbirth	Child-bearing families	Psychosocial and interpersonal-aimed PFA	To assess the integration of psychosocial and	Ways nurses can integrate psychosocial and	Contact and engagement; safety and comfort;

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Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
						interpersonal interventions in perinatal disaster care using PFA	interpersonal interventions in perinatal disaster care	stabilization; information gathering: current needs and concerns; practical assistance; connection with social supports; information on coping; liking with collaborative services
Guilaran and Nguyen (2020)	Research article	Southeast Asian countries	All types of disasters	Disaster responders	PFA and psychotherapy	To assess the challenges of providing MHPSS and recommendations on strategies to improve service delivery	–	An effective hierarchy of mental health interventions could be: provision of basic services, strengthening of social network, provision of focused and non-specialized interventions, and provision of specializes treatments
Landa-Ramírez and Murillo-Cruz (2019)	Case report	United States	Unspecified	Emergency medicine specialists	Emergency psychology disseminated using a biopsychosocial model	To describe the desirable characteristics that a psychosocial service should comprise of	–	To create an evidence-based branch of psychology specialized in emergency medicine psychologists have to study the medical concepts necessary to understand the relevant elements of the diagnostics, prognosis, and procedures in emergency medicine. This will make the psychologist become aware of the needs and dynamic of the patients, informal caregivers and health staff in the emergency medicine department
Lee et al. (2018)	Panel survey	South Korea	Unspecified	Children in post-disaster settings	Psychosocial intervention	To develop a psychosocial intervention protocol for children in a post-disaster South Korea setting	Recommendation for treating children exposed to disasters	Factors such as 'appropriate time for assessment after the disaster', 'prerequisites for screening and in-depth intervention', 'classifying the degree of psychosocial symptoms', and 'social and mental health services' are very important; Screening tests are recommended for all children

(continued on next page)

Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
								exposed to disasters, particularly during acute periods of disaster. After the completion of screening tests, assessment should include in-depth interviews and interventions for the high-risk group
Lee et al. (2019)	Scoping review and Delphi survey paper	Korea	Unspecified	23 mental health experts included in the survey	Psychosocial health care	To develop new guidelines that entail the best ways of providing psychosocial care to ensure mental health following a disaster.		
Manaois et al. (2020)	Research article	Southeast Asia region	Unspecified	Unspecified	PFA	To understand how PFA has being strategically applied and adopted in the South East (SEA) region.	–	Need to strengthen PFA evaluative, conduct research about local adaptations of PFA, increase capability-building initiative, initiate knowledge sharing among communities, institutionalize PFA activities, promote and strengthen resilience interventions
Marahatta et al. (2017)	Research case study	Nepal	2015 Nepal earthquake	Unspecified	Psychosocial health care	To assess how mental health and psychosocial support was carried out during the 2015 Nepal earthquake	–	Actions to be taken immediately: establish a mental health unit under the Ministry of Health; Form a central committee to coordinate the mental health and psychosocial activities carried out by the Ministry of Health and line ministries; Develop and disseminate the MHPSS disaster-preparedness plan; Establish a strong monitoring and evaluation mechanism to ensure the quality of the intervention provided Actions to be taken in the longer term: Establish specialist psychiatry treatment units in all regional/zonal hospitals and develop a referral network; Integrate mental health into primary health-care centers in a

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Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
								phase-wise manner; Develop a short diploma on mental health and counseling for paramedics, nurses and social worker; Revise the curriculum of health workers, with more emphasis on mental health; Run programs to improve awareness about mental health, reduce stigma about mental disorders and promote mentally healthy lifestyles in the community
O'Donnell et al. (2020)	Pilot study	Australia	Australian bush fires	Bushfire survivors	Psychosocial health care	To develop a psychosocial intervention strategy that targets distress and poor adjustment in post-disaster events	Feasibility, acceptability, safety and effectiveness	The program can be safely delivered by trained specialist after two days of training by appropriately experienced mental health clinicians; After training, coaches demonstrated improvements in knowledge and confidence in delivering the intervention, and were able to implement the intervention in a safe manner that was acceptable to participants, providing support for the intervention's feasibility
Seto et al. (2019)	Case study	Japan (Iwate, Miyagi and Fukushima prefectures)	Great East Japan Earthquake (GEJE)	Organization involved in providing MHPSS services	Mental health and psychosocial support (MHPSS)	To reveal the types of activities that were provided as MHPSS	Characteristics of organizations that provided interventions and problems to overcome related to the provision of interventions to victims	Characteristics of organizations that provided interventions: one-on-one support for individuals in need of assistance; support for collective activities; support around living conditions and income; increasing public awareness about mental health; human resource development to improve response capabilities of interventions; support for providers; facilitating

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Table 3 (*continued*)

Author and year	Study design	Country	Type of crisis	Study participants	Type of psychological support	Theme/Objective of the study	Main variables	Main results
								collaborations among providers in affected communities; Problems to overcome: human resources; funding; strategies and skills; difficulties in presenting and documenting achievements and the cost-effectiveness of activities to funders; insufficient care for providers; cooperation with other organizations
Stancombe et al. (2022)	Case study	Manchester, England	Manchester Arena bombing in 2017	Disaster survivors	Psychosocial health care	To understand the delivery of psychosocial care from the perspective of the survivor	Traumatic symptoms (experience of distress) perceived by victims and experiences of psychosocial care	Experiences: distress, secondary stressors (e.g., media responses, perceived neglect), experience of support, constraints in seeking support, being part of peer-support groups. Experiences of psychosocial care services: access to care and suitability of care
Stene et al. (2022)	Country case study	Norway, France and Belgium	Terrorist attacks	Disaster survivors and exposed population	Psychosocial health care	To describe how psychosocial care to civilians after terrorist attacks were handled	Characteristics of the attacks, psychosocial care responses according to characteristics of the exposed populations and of the health systems	The geographical context is of importance for the psychosocial care response, it influences the facility of reaching and identifying exposed individuals; the psychosocial care response depends on characteristics of those who were exposed and by the nature of the health systems

those provided to disaster victims, were recommended for responders as well.

Measures like trauma recovery programs, supportive social and peer interactions, and individually tailored support through PFA sessions (Choi, 2019; Guilaran & Nguyen, 2020; Ha, 2020; Manaois et al., 2020; Xi et al., 2019). Responders are also assumed to be knowledgeable enough to take care of themselves. They can do this by engaging in part-time activities, mindfulness, meditation, and mantra interventions (Guilaran & Nguyen, 2020).

4.5.2. *Crisis management and structure*

If emergency psychological care is to be delivered in the best way possible, the structure and management of response teams should be done correctly. The studies that reported on effective management structures are Dückers et al. (2017), Dückers et al. (2018), Forbes et al. (2011), Foster et al. (2019), Xi et al. (2019), Landa-Ramírez and Murillo-Cruz (2019), Marahatta et al. (2017), Seto et al. (2019), Stancombe et al. (2022), and Stene et al. (2022).

4.5.2.1. Structure of the response system. It is a government's obligation to establish psychological intervention groups before any disaster occurs (Stancombe et al., 2022; Stene et al., 2022). These intervention groups should be a structured web of coordination and collaboration protocols. Such multi-agency systems should include professional mental health experts, trained volunteers, trauma experts, government officials, and contacts of representatives from the local communities (Dückers et al., 2017, 2018; Ha, 2020).

4.5.2.2. Work plan. Before any work starts, a clear list of the work principles, guidelines, schedule, and division of responsibilities among

psychology-response team members should be made available (Dückers et al., 2018; Ha, 2020; Xi et al., 2019). According to Xi et al. (2019), a preliminary visit to the disaster site for information gathering is essential, as it helps formulate disaster-tailored interventions.

Apart from a correctly laid-out plan, funding (Dückers et al., 2018) and the necessary materials (Xi et al., 2019) should be readily available to a psychologist in disaster cites.

4.5.2.3. Time responsiveness. The time for responding after a disaster should not be after mental health issues like PTSD have set in (Stancombe et al., 2022; Stene et al., 2022). It should be preventive, rather than curative. The intervention should also be long enough to have a positive effect (Landa-Ramírez & Murillo-Cruz, 2019).

4.5.2.4. Management. People who are modest and trustworthy were stated to be most fitting for the role of crisis managers (Xi et al., 2019). In this regard, managers were seen responsible for sense-making, decision making, and carrying out coordination plans (Dückers et al., 2017; Forbes et al., 2011; Foster et al., 2019; Xi et al., 2019).

On another note, the importance of team coordination was advocated by Landa-Ramírez and Murillo-Cruz (2019), Seto et al. (2019), Stene et al. (2022), and Xi et al. (2019).

Collaboration is made possible by properly handling and passing information among the stakeholders (Landa-Ramírez & Murillo-Cruz, 2019; Marahatta et al., 2017; Seto et al., 2019; Stene et al., 2022; Xi et al., 2019). This is achieved when the crisis managers make sure that the government and civil society actors work together to ensure the psychological and other needs of the affected populations are provided for in the appropriate way (Dückers et al., 2017, 2018; Forbes et al., 2011). In the report by Xi et al. (2019), it was recommended that mental health response teams stay up-to-date with information from the primary rescue response teams, so that they can perform effective and scientific fieldwork. The effect of this collaboration was further elaborated upon by Dückers et al. (2018). In the study, programs that had good cooperation between crisis managers and other actors also reported a high amount of PTSD prevention. In this regard, the present review noticed that the most frequently mentioned collaborative friend was the volunteers (Dückers et al., 2017, 2018; Forbes et al., 2011; Landa-Ramírez & Murillo-Cruz, 2019; Marahatta et al., 2017; Seto et al., 2019; Stene et al., 2022; Xi et al., 2019).

Apart from collaboration, integration is another way of ensuring smooth operations among involved stakeholders (Landa-Ramírez & Murillo-Cruz, 2019; Xi et al., 2019). In the panel survey study by Xi et al. (2019), mental health workers suggested that emergency psychology responses should be integrated with centralized rescue and emergency medical response systems instead of independent sets. One such example is the specialized psychology program based in Mexico (Landa-Ramírez & Murillo-Cruz, 2019).

4.5.3. Psychological interventions

All the included studies reported on the protocols, guidelines, strategies, and techniques used as interventions for emergency psychology in the aftermath of an emergency or disaster. Choi (2019), Figueroa et al. (2022), Forbes et al. (2011), Guilaran and Nguyen (2020), Ha (2020), Xi et al. (2019), Manaois et al. (2020), and Stene et al. (2022) as well as models of intervention at school have been proposed: Dückers et al. (2017), Dückers et al. (2018), Forbes et al. (2011), Foster et al. (2019), Xi et al. (2019), Landa-Ramírez and Murillo-Cruz (2019), Marahatta et al. (2017), Seto et al. (2019), Stancombe et al. (2022), and Stene et al. (2022).

4.5.3.1. Consideration of the present needs and risks. Different disasters will have varying degrees of psychological impact on the victims, witnesses, and survivors (Dückers et al., 2017, 2018; Marahatta et al., 2017). The level of impact is influenced by the exposure, time after the disaster, and the person's mental "strength". Due to this, the immediate needs of the victims will vary as well (Guilaran & Nguyen, 2020; Manaois et al., 2020; Xi et al., 2019). Therefore, it becomes imperative that the psychologist or mental health expert evaluate the current condition and needs of the victim (Choi, 2019; Figueroa et al., 2022; Forbes et al., 2011; Landa-Ramírez & Murillo-Cruz, 2019; Lee et al., 2018; Marahatta et al., 2017; Stene et al., 2022).

In this regard, the most common immediate needs of survivors are food, water, basic physical first aid, information about what happened, the fate of their loved ones and close friends (Choi, 2019; Figueroa et al., 2022; Forbes et al., 2011; Guilaran & Nguyen, 2020; Marahatta et al., 2017; Stene et al., 2022). Marahatta et al. (2017) reported that it is essential for the distressed survivors to be comforted and made aware that their stress reactions are expected in such situations. The psychologist or responder should listen and be able to recognize and empathize with their grief (Choi, 2019).

After meeting the present needs of the survivor, a general psychological assessment should be done to place their mental state (Dückers et al., 2017, 2018; Foster et al., 2019; Ha, 2020; Landa-Ramírez & Murillo-Cruz, 2019). Even without this assessment, it should be assumed that all disaster victims and witnesses are deserving of mental help (Forbes et al., 2011; Xi et al., 2019). Within the broad classification of survivors, they are people who are naturally affected more than others. Hence, an individual psychological assessment may be required for identifying and helping them effectively. The assessments should be done by an informed psychologist or trained volunteer e.g., an undergraduate psychologist, as was highlighted by Landa-Ramírez and Murillo-Cruz (2019). The use of mixed assessment methods, such as involving other professionals as a collateral source of information (Lee et al., 2018; Marahatta et al., 2017), facilitates a clearer understanding of the existing psychopathological symptoms and the development of interventions. An initial psychosocial assessment should take 30–60 min, depending on the risk profile of the victim (Lee et al., 2018). A one-year follow-up psychological screening is also recommended (Stene et al., 2022).

4.5.3.2. Providing a supportive social context. One of the most effective ways of mitigating adverse trauma effects is establishing contact with primary support persons like significant others, family members, friends, neighbors, and community members (Choi, 2019; Dückers et al., 2017, 2018; Forbes et al., 2011; Foster et al., 2019; Landa-Ramírez & Murillo-Cruz, 2019; Manaois et al., 2020; Marahatta et al., 2017; Seto et al., 2019; Stancombe et al., 2022; Stene et al., 2022; Xi et al., 2019). Such a setup is usually termed a social support setting. It aims at strengthening and focusing social support and participation (Dückers et al., 2018; Figueroa et al., 2022; Forbes et al., 2011; Foster et al., 2019; Giarratano et al., 2019; Ha, 2020; KC et al., 2019; Manaois et al., 2020; Seto et al., 2019; Stancombe et al., 2022).

The provision of social support can also be enabled through peer support groups, online groups, stress hotlines, workshops (Giarratano et al., 2019; Manaois et al., 2020; Stancombe et al., 2022), or through a "family-centered continuity-of-care approach" (Foster et al., 2019). Such approaches should be culturally acceptable, two-way (giving and taking), and incorporate emotional, instrumental, and informational aspects (Foster et al., 2019; Giarratano et al., 2019; Ha, 2020; KC et al., 2019; Seto et al., 2019). In support of such information, Seto et al. (2019) reported that out of 104 disaster situations, mental response organizations had initiated social support activities in 97 of them. Moreover, in the study by Stancombe et al. (2022), 11 out of 18 interviewees reported benefitting from formal group events organized by psychological responders.

4.5.3.3. Support for living conditions and income. Personal material destruction usually occurs swiftly when a disaster strikes, with the remaining material belongings deteriorating with time. This has been

linked to declining income rates among disaster survivors (Guilaran & Nguyen, 2020), further deteriorating their mental health (Seto et al., 2019). It is self-evident then that the diagnosis of a traumatic disorder in the aftermath of a disaster has a ripple effect on the victim's life (Figueroa et al., 2022; Guilaran & Nguyen, 2020).

In a study by Seto et al. (2019), three response groups created employment for people with disabilities ad actively engaged in buying handicrafts made by the poor and elderly in that community. The study undertakers reported that such an intervention would go a long way in decreasing their worry about paying bills. The provision and distribution of food and essential items were also highly impactful (Figueroa et al., 2022; Forbes et al., 2011; Ha, 2020).

4.5.3.4. Psychological care. In the studies reviewed, mental health services were provided through hospital-based clinical services, mobile health camps, and counseling hotlines. The frequently mentioned forms of care across studies were PFA, PSS, and spiritual support (Choi, 2019; Foster et al., 2019; Ha, 2020; KC et al., 2019; Lee et al., 2019; Marahatta et al., 2017; Stancombe et al., 2022; Stene et al., 2022; Xi et al., 2019). These were also the primary emergency psychological services listed under the World Health Organization's MHPSS guidelines (KC et al., 2019).

The psychological services offered in clinics or camps included debriefing, psychoeducation, cognitive-behavioral therapy, psych traumatology, and psychotropic medication (Dückers et al., 2018; Forbes et al., 2011; Giarratano et al., 2019; KC et al., 2019;Stancombe et al., 2022; Stene et al., 2022). During such services, techniques and strategies, such as mood copying techniques, are taught to disaster survivors (Choi, 2019; Dückers et al., 2018). Moreover, Lee et al. (2018) recommended the PFA, TRT, SSET, and TF-CBT intervention programs for utmost psychological care.

4.5.3.5. Mental health knowledge. This is also referred to as psychoeducation and is usually done in a group setting after the traumatic event (Lee et al., 2019). An educative session usually teaches about the importance of close social contact and positive thinking in the aftermath of a disaster (Dückers et al., 2018; Figueroa et al., 2022;Forbes et al., 2011; KC et al., 2019; Lee et al., 2019). One such intervention is the SOLAR program reported by O'Donnell et al. (2020). These sessions also look at normal trauma reactions i.e., "reassurance through normalization" (Figueroa et al., 2022), self-monitoring and coping strategies, relaxation techniques, guidelines on how to deal with media coverage, misconceptions about post-disaster trauma, and the most available place to seek further assistance (Figueroa et al., 2022; Forbes et al., 2011; Seto et al., 2019). Information about these sessions are usually disseminated through leaflets, brochures, teaching sessions, and site visits (Choi, 2019; Dückers et al., 2018; O'Donnell et al., 2020). They usually include the contact details of the concerned specialized psychologists and, quite often, even provide suggestions for activities that can be done to pass the time during these sessions (Choi, 2019; Giarratano et al., 2019; KC et al., 2019; Manaois et al., 2020; Seto et al., 2019). The dissemination of such information is aimed at increasing the level of personal and community resilience (Lee et al., 2018).

4.5.3.6. Tailored intervention. If such a non-targeted intervention, as explained in the previous sections, does not work, those who require further mental health clinical support are identified and referred. Following this, one-on-one support for individuals is tailored by considering their specific cultural, spiritual, and psychological traits (Choi, 2019; Forbes et al., 2011; Seto et al., 2019). These interventions include advice and hand-to-hand help from the emergency psychologist during recovery (Xi et al., 2019).

4.5.3.7. Adaptation of technology. Technological developments have changed how disaster victims connect with professional psychologists and receive psychoeducation (Choi, 2019; Giarratano et al., 2019). One such example of technology adoption is the online peer support groups and distress hotlines (Giarratano et al., 2019).

4.5.4. Challenges

While the aforementioned interventions can be quite beneficial and effective, they come with their own set of challenges as well. Emergency psychologists and response organizations face challenges especially when it comes to implementing the protocols, guidelines, and strategies identified in this review:

i. Post-disaster mental health is considered a low priority in some parts of the world (KC et al., 2019). Many governmental agencies focus on infrastructural repairs and the physical needs of survivors.
ii. Mostly in developing countries, there is a low amount of awareness about the importance of mental health (Forbes et al., 2011; KC et al., 2019; Lee et al., 2019). There is also social stigma surrounding those who suffer from mental health conditions (KC et al., 2019).
iii. The number of mental health professionals in some regions is relatively small. Studies by KC et al. (2019) and Marahatta et al. (2017) reported only 110 psychiatrists and 15 clinical psychologists to be clinically practicing in the entire country of Nepal. The lack of trained professionals leads to unspecialized care that yields little or no progress. In the study by Stancombe et al. (2022), nine out of 10 interviewees who had sought help from a general practitioner (GP) reported that their consultations with the GP were unhelpful.

5. Discussion

The thematic analysis of the included studies led to the categorization of different aspects of emergency psychology interventions that should take into account when professionals create and manage protocols, guidelines, and strategies to make them as homogenous and standardized as possible among different groups of victims.

Here are the main themes that are emerged from this review and that can guide the construction and implementation of standardized interventions and guidelines:

i. Firstly, qualified responders, psychology specialists, or volunteers need to have secured their basic needs, such as food, shelter, clothing, and water to ensure a good level of physical wellbeing. Moreover, their psychological adjustment should also be guaranteed. They should receive proper regular training to both manage and implement the interventions in a rigorous and standardized way but also to have the possibility to reflect on and handle their needs and negative emotions that naturally arise in this emergency situations (Choi, 2019; Figueroa et al., 2022; Forbes et al., 2011; Manaois et al., 2020; Xi et al., 2019).
ii. When a disaster strikes, the crisis manager is responsible for bringing together an existing team of mental health responders. They then have to collaborate with the other types of responders (Dückers et al., 2018; Foster et al., 2019; Landa-Ramírez & Murillo-Cruz, 2019; Seto et al., 2019; Stancombe et al., 2022; Stene et al., 2022).
iii. A work plan, means of coordination, and division of roles are carried out among the mental health responders (Dückers et al., 2017; Forbes et al., 2011; Foster et al., 2019; Xi et al., 2019).
iv. The mental health responders meet the disaster victims within the recommended time to assess their present needs and risks (Stancombe et al., 2022; Stene et al., 2022).
v. A socially supportive environment is provided for the victims, their families, and close friends (Choi, 2019; Dückers et al., 2017, 2018; Forbes et al., 2011; Foster et al., 2019; Landa-Ramírez &

Murillo-Cruz, 2019; Manaois et al., 2020; Marahatta et al., 2017; Seto et al., 2019; Stancombe et al., 2022; Stene et al., 2022; Xi et al., 2019).

vi. In most cases, group structured interventions are then used to disseminate mental health knowledge to those affected. These will mainly include information on normal trauma reactions and strategies that can help people to cope with the experience they have just had (Choi, 2019; Foster et al., 2019; Ha, 2020; KC et al., 2019; Lee et al., 2019; Marahatta et al., 2017; Stancombe et al., 2022; Stene et al., 2022; Xi et al., 2019).

vii. Among the larger group, psychologists will then identify if there are those who require tailored psychological care. The required care may be given through psychotherapy or one-on-one counseling sessions (Choi, 2019; Forbes et al., 2011; Seto et al., 2019; Xi et al., 2019).

5.1.1. What next after an emergency psychology intervention?

After the first few weeks of emergency psychology support, two things were highly recommended:

i. The first responders, i.e. rescuers, psychologists, and volunteers, should also receive psychological care due to their exposure when interacting with the trauma victims.
ii. A follow-up of the psychological state of the victims, mostly those who were largely traumatized, should be done even after the intervention period is considered to be over.

With such general flow, it may seem rational that all emergency psychology interventions should be done in the same way. However, this was not always the case; the strategies and techniques used were different, as was the case seen among the reviewed studies. Nevertheless, the main objective was always the same; every response team wanted to prevent the development of traumatic disorders among disaster survivors and victims, regardless of what interventions and co-interventions it uses (Corey et al., 2021; Jacobs et al., 2019; Roberts et al., 2019).

Apart from the type of intervention, emergency psychology support also differed in terms of culture, age group, the exposure level of survivors, and experience of the psychology responders. In terms of age groups, Lee et al. (2018) termed children as emotionally vulnerable and called for tailored intervention. Seto et al. (2019) stated that the existence of high-risk groups like the elderly, women, and children should be known to psychologists. Such groups may require the psychologist to have specialized training (KC et al., 2019; Lee et al., 2018, 2019; Marahatta et al., 2017; Stancombe et al., 2022; Vernberg et al., 2016; Xi et al., 2019). A person may then be forced to ponder the question, “If specialized intervention is so important, why is it not the first choice?”

The present review established that group-based interventions were first provided before any tailored psychological care was provided. This may have been to increase the outreach of mental health care to people in a post-disaster setting. Another reason agreed upon by Bisson et al. (2010) and Dückers and Thormar (2014) was that group-based approaches encouraged sharing, social cohesion, and a supportive environment.

Despite variations in the age-group tailored or group-based interventions, all the adopted interventions were meant to integrate the developmental, cultural, personal, and contextual sensitivity of the disaster victims (Dückers et al., 2017; Forbes et al., 2011; Foster et al., 2019; Landa-Ramírez & Murillo-Cruz, 2019; Marahatta et al., 2017; Xi et al., 2019). Thus, the review's findings agree with that of the other reviews (Corey et al., 2021; Jacobs et al., 2019; Lee et al., 2015; Lee et al., 2016; Roberts et al., 2019; Sim & Wang, 2021).

The findings of this review should be interpreted in light of the limitations of this work. First, we only assessed the English-language literature, and may, therefore, have overlooked significant findings reported in other languages. Second, although we strove to conduct an exhaustive search, it is possible that a relevant search term may have been omitted and consequently that relevant studies were not retrieved. Third, although we attempted to thoroughly screen the retrieved studies, again it is possible that some salient studies were overlooked. Finally, although several databases have been taken into account, others, such as WoS, should be included in future research on the topic.

6. Conclusion

After a preliminary research, the present review set out to explore the protocols and strategies used by emergency psychologists in providing mental health care to disaster victims (Hernandez-Cervantes, 2021; Soto-Baño and Clemente-Suárez, 2020). The inclusion of both case studies (reports) and research articles (recommendations) in the thematic analysis helped identify and categorize the recurring topics. These categories comprise responders, crisis management, and psychological interventions (Tessier et al., 2021; Tessier et al., 2022). A brief summary of identified challenges and a general intervention flow had also been provided. In conclusion, caring for responders, a multidisciplinary team lead by a crisis manager, a well-defined work plan, fostering a socially supportive environment is provided for the victims, their families, and close friends, dissemination and understanding the need of tailored psychological interventions represent the main features of an effective intervention's implementation.

7. Implications of the study

There have been many reviews about the psychological interventions used in the aftermath of a disaster. Most of these examined the guidelines provided by bodies like WHO and ISAC. However, they were centered exclusively around either PFA or PSS. On the other hand, the present specific systematic review has provided a broader view by incorporating PFA and PSS. It considered the perspectives of the disaster victims, mental health workers, and response organizations. Thus, it gives a more general sense and view of how an emergency psychological intervention should be carried out when necessary. Considering future perspective of the implementation of effective interventions could be the identification of relevant stakeholders and resources, validated questionnaires for assessments, creation of guidelines for care of children and a plan for community psychosocial assessment (Waelde, 2014). Furthermore, research should be implemented. Monitoring interventions through systematic data collection may guide the decision-making on, whether interventions should be modified and for how long they are needed. Additionally, international discussion and agreement could improve the comparability of results and strengthen the knowledge on best practices for psychosocial care responses to crisis events.

Declaration of competing interest

None.

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