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Ayurveda in Disaster and Mass Emergency Situations for Healing Mind after the Storm: A Comprehensive Review Sharma A.¹, Bhagat A.², Tiwari R.³

1. PG Scholar department of Kriya Sharir Shri Narayan prasad Awasthi GAC Raipur, Chhattisgarh, India.
2. Assistant professor department of Kriya Sharir Shri Narayan prasad Awasthi GAC Raipur, Chhattisgarh, India.
3. PG Scholar department of Kayachikitsa Shri Narayan prasad Awasthi GAC Raipur, Chhattisgarh, India

ABSTRACT:

Disasters and mass emergencies—including cyclones, floods, earthquakes, pandemics, and industrial accidents—create not only physical injury but also profound psychological distress. Survivors commonly face acute stress reactions, anxiety, depression, grief, sleep disruption, and, in some cases, long-term post-traumatic stress disorder. While modern emergency medicine prioritizes life-saving and critical care interventions, growing public health frameworks emphasize the importance of culturally sensitive Mental Health and Psychosocial Support (MHPSS) to strengthen recovery and resilience.

In regions such as India, where traditional systems of medicine remain deeply rooted in community life, Ayurveda offers a complementary perspective grounded in holistic balance and preventive care. Classical concepts including *Manas*, *Satva*, *Ojas*, and *Pragya Aparadha* provide a theoretical lens to understand trauma-related psychological imbalance. Therapeutic modalities such as herbal adaptogens (e.g., *Ashwagandha*, *Brahmi*), *yoga*, *pranayama*, meditation, and lifestyle regulation through *Dinacharya* may support stress adaptation and long-term rehabilitation.

This review synthesizes classical knowledge and contemporary evidence to propose a structured framework for integrating Ayurveda into disaster preparedness and response policies. Emphasis is placed on safety, quality assurance, inter-system collaboration, training, and systematic research to ensure effective, sustainable implementation.

Key words:

Pragya aparadha , Dinacharya, Yoga, Pranayama, Swasthavritta, Rasayana

CORRESPONDING AUTHOR:

Dr. Arshita Sharma

PG Scholar department of Kriya Sharir

Shri Narayan prasad Awasthi GAC Raipur, Chhattisgarh, India

Email: arshitasharma162@gmail.com , Mobile no. 7999540234

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Introduction:

The rising frequency and severity of both natural and human-made disasters—driven by climate change, rapid urbanization, and geopolitical tensions—have intensified global health challenges. While emergency systems efficiently address trauma, infections, and acute medical crises, the psychological aftermath often persists long after physical wounds heal. Survivors frequently experience anxiety, depression, insomnia, adjustment difficulties, and post-traumatic stress disorder, yet mental health services in disaster settings remain comparatively limited. International public health bodies such as the World Health Organization and the Inter-Agency Standing Committee emphasize the need for culturally responsive, community-based psychosocial interventions as part of comprehensive disaster care. In India, the National Disaster Management Authority coordinates response efforts and increasingly acknowledges the significance of mental health support during recovery phases.

India's pluralistic healthcare framework includes Ayurveda under the Ministry of AYUSH, offering a holistic model that integrates physical, psychological, and preventive dimensions of health. Classical Ayurvedic disciplines provide relevant insights for disaster contexts: *Agad Tantra* addresses toxic exposures, *Swasthavritta* emphasizes preventive and environmental health practices, and *Rasayana* focuses on rejuvenation and resilience building. Together, these principles support immediate care, structured recovery, and long-term strengthening of community well-being within disaster health management strategies.

Literature Review

- **Classical Texts:** Classical Ayurvedic texts (*Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*). describe toxicology, wound care, and preventive measures relevant to emergencies.

- **Modern Research:** Studies highlight Ayurveda's role in immunity enhancement, stress reduction, and community health (Patwardhan & Mashelkar, 2009). Contemporary clinical research on Ayurvedic herbs and mind-body interventions.
- **Global Perspectives:** WHO recognizes traditional medicine as a valuable resource in public health emergencies (WHO, 2001). Public health guidelines on disaster mental health and psychosocial support.
- **Policy Frameworks:** The Ministry of AYUSH has issued guidelines for Ayurveda's role in pandemics and disaster preparedness (AYUSH, 2020). Policy documents related to traditional medicine integration.

Psychological Impact of Disasters

- Disasters generate multiple layers of psychological disturbance, often beginning with acute stress reactions and progressing to more persistent conditions such as anxiety disorders, depression, and post-traumatic stress disorder (PTSD). Individuals may also experience sleep disturbances and, in some cases, develop substance use disorders as maladaptive coping mechanisms. Psychological trauma frequently presents with somatic symptoms, including headaches, gastrointestinal disturbances, fatigue, and signs of autonomic imbalance, highlighting the profound interconnectedness between the body and mind. In this context, integrative approaches that address both psychological and physiological dimensions may offer significant advantages, particularly in community-based settings where holistic and accessible interventions are essential.

Case Studies

- **COVID-19 Pandemic:** Ayurvedic immunity boosters like *Guduchi* and *Chyawanprash* were widely promoted for preventive care.
- **Flood Relief in Kerala (2018):** Ayurvedic fumigation (*Dhoopana*) was used in relief camps to reduce infection risk.
- **Post-Tsunami Rehabilitation (2004):** Yoga and meditation were employed to address trauma and stress among survivors.

Methodology

This review synthesizes evidence from classical Ayurvedic literature, government guidelines, and peer-reviewed studies indexed in PubMed and Scopus. Case examples were selected based on documented use of Ayurveda in disaster contexts.

Ayurvedic Conceptual Framework for Trauma

In Ayurveda, trauma is understood within a comprehensive conceptual framework that integrates mental, emotional, and physiological dimensions of health. The mind, or *Manas*, is described as being governed by three fundamental qualities—Satva (clarity and balance), Rajas (activity and agitation), and Tamas (inertia and darkness). Exposure to traumatic events tends to aggravate Rajas, leading to restlessness, fear, irritability, and hyperactivity, while simultaneously increasing Tamas, which manifests as withdrawal, confusion, helplessness, or hopelessness. As these two qualities become imbalanced, Satva—the quality responsible for clarity, resilience, and emotional stability—diminishes, resulting in psychological disequilibrium.

Another important concept is *Ojas*, which represents the essence of vitality, immunity, and psychological endurance. Ayurveda recognizes that intense stress, prolonged grief, and emotional shock can deplete *Ojas*, weakening both physical resistance and mental resilience. When *Ojas* is compromised, individuals become

more susceptible to illness, fatigue, and emotional instability.

Ayurveda also emphasizes *Pragya Aparadha*, or errors of intellect, as a contributing factor in disease development. This refers to impaired judgment, maladaptive coping mechanisms, and inappropriate responses to stress. In the context of disasters, overwhelming fear, confusion, and unresolved grief may disturb mental balance and lead to unhealthy behavioural and cognitive patterns. Interestingly, this traditional framework closely parallels modern concepts of stress physiology, neuroendocrine dysregulation, and trauma-related cognitive distortions, illustrating a meaningful convergence between classical Ayurvedic thought and contemporary psychological science.

Ayurvedic Interventions Relevant to Disaster Mental Health

Ayurvedic interventions offer several approaches that may be relevant in supporting mental health during and after disasters. Among these, herbal adaptogens are frequently discussed for their potential role in stress modulation. *Ashwagandha* (*Withania somnifera*) has been studied for its anxiolytic and cortisol-lowering effects and may help improve sleep quality and stress tolerance. *Brahmi* (*Bacopa monnieri*) is traditionally valued for enhancing cognitive function and supporting emotional balance, while *Shankhpushpi* has long been indicated for anxiety, insomnia, and memory disturbances. Although emerging research is encouraging, many clinical studies remain limited by small sample sizes, and further work is needed to establish standardized dosing protocols and long-term safety profiles.

Mind–body practices form another cornerstone of Ayurvedic support. *Yoga, pranayama*, and meditation are practical, low-cost strategies that can be implemented even in temporary shelters or community relief settings. Evidence suggests that these practices help reduce sympathetic overactivation, improve sleep,

enhance emotional regulation, and foster resilience. By encouraging breath awareness, gentle movement, and mental focus, they promote self-regulation and collective participation, aligning well with global psychosocial support models that emphasize community cohesion and empowerment.

Ayurveda also highlights the importance of *Dinacharya*, or daily routine, particularly in restoring stability after the disruption caused by disasters. Sudden upheaval often disturbs circadian rhythms, appetite, and sleep patterns, which can intensify anxiety and emotional distress. Re-establishing regular sleep schedules, consuming light and easily digestible meals, practicing oil massage (*Abhyanga*), and engaging in supportive social interaction can gradually rebuild a sense of predictability and safety. Such structured routine fosters psychological security and reduces internal agitation.

In addition, traditional Ayurvedic practice incorporates counselling that addresses emotional balance, ethical conduct, and spiritual grounding. Community-based discussions that include relaxation techniques, positive guidance, and culturally meaningful stress education may serve as accessible psychosocial support. When delivered in a familiar and respectful manner, these interventions can strengthen coping capacity, restore hope, and encourage collective resilience in the aftermath of disaster.

Policy Integration of Ayurveda in Disaster Response

Effective integration of Ayurveda into disaster mental health care requires thoughtful governance and strong institutional collaboration. Coordination among the Ministry of Health, the Ministry of AYUSH, the National Disaster Management Authority, and state disaster response authorities is essential to ensure alignment of objectives, resources, and field-level implementation. Including AYUSH representation in disaster planning committees can facilitate

culturally responsive strategies and improve coordination during emergencies. At the clinical level, it is essential to establish standardized protocols specifically designed for emergency situations. These could include Ayurvedic mental health kits with rigorously quality-assured herbal formulations, structured yoga and pranayama guides suitable for group practice, validated tools for assessing stress and depression, and clearly defined referral pathways for individuals experiencing severe psychiatric conditions. Importantly, Ayurvedic interventions should serve as a complementary component that enhances, rather than replaces, conventional psychiatric care, thereby safeguarding patient safety and ensuring continuity of treatment.

India

- The **Ministry of AYUSH** has developed guidelines for Ayurveda in public health emergencies, emphasizing immunity promotion, stress management, and preventive care.
- During the **COVID-19 pandemic**, AYUSH protocols were officially integrated into national health advisories, promoting herbal formulations and yoga practices for community resilience.
- State-level disaster relief (e.g., Kerala floods) included Ayurvedic fumigation and herbal interventions in relief camps.

Training and capacity building form another critical pillar. AYUSH practitioners working in disaster settings should be equipped with skills in Psychological First Aid, trauma-informed care, appropriate referral mechanisms, and systematic documentation practices, including pharmacovigilance. Cross-training initiatives involving both conventional and AYUSH professionals can strengthen collaborative functioning, reduce misunderstandings, and enhance integrated service delivery on the ground.

Quality control and safety oversight must remain central to any such initiative. The use of GMP-certified herbal products, careful screening for potential herb–drug interactions, establishment of adverse event reporting systems, and obtaining informed consent are essential safeguards. Clear regulatory supervision not only protects beneficiaries but also strengthens credibility and public trust in integrative models.

Global Context

- The **World Health Organization (WHO)** has recognized traditional medicine, including Ayurveda, as a valuable resource in strengthening health systems during emergencies.
- Collaborative research initiatives between India and international agencies are exploring Ayurveda's role in pandemic preparedness and disaster resilience.

Finally, systematic monitoring and research are necessary to evaluate effectiveness and scalability. Structured indicators—such as reductions in stress scores, improvements in sleep quality, patient satisfaction metrics, and documentation of adverse events—should be incorporated into field operations. Operational research conducted during disaster deployments can generate practical evidence, refine protocols, and guide future policy decisions, ensuring that integrative approaches evolve in a scientifically grounded and ethically responsible manner.

Results

Ayurvedic Principles in Emergencies

- **Agad Tantra:** Management of poisoning, bites, and toxic exposures.
- **Swasthavritta:** Hygiene, diet, and lifestyle practices to prevent disease spread.
- **Rasayana:** Immunity enhancement and resilience-building.
- **Panchakarma:** Detoxification and rehabilitation post-disaster.

Applications

- **First Aid:** Herbal wound-healing agents (turmeric, neem), oils for burns, herbal ORS alternatives.
- **Mental Health:** Yoga, pranayama, meditation, and adaptogenic herbs like *Ashwagandha* (Telles & Singh, 2013).
- **Infectious Disease Control:** Herbal fumigation, immunity boosters.
- **Rehabilitation:** *Rasayana* therapy and dietary guidelines for survivors.

Key Recommendations

Preparedness

- Launch awareness programs on Ayurvedic hygiene and lifestyle practices (*Swasthavritta*).
- Stock Ayurvedic first-aid kits with herbal wound remedies, burn oils, and rehydration solutions.

Response

- Use herbal fumigation (*Dhoopana*) for disinfection in relief shelters.
- Provide yoga, pranayama, and meditation sessions for trauma and stress relief.
- Apply Ayurvedic oils and herbs for minor injuries and infections.

Recovery

- Introduce *Rasayana* therapy to rebuild strength and immunity.
- Offer dietary guidance to restore digestive health.
- Encourage community-based yoga and meditation for psychosocial healing.

Policy Integration

A comprehensive policy integration framework for incorporating Ayurveda into disaster mental health systems requires coordinated governance, clinical standardization, capacity building, and continuous evaluation. Effective implementation should involve collaboration among the Ministry of Health, the Ministry of AYUSH, the National Disaster Management Authority, and state disaster response authorities, with formal inclusion of AYUSH

representatives in disaster planning committees to ensure integrative alignment. At the clinical level, standardized emergency Ayurvedic mental health kits may be developed, containing quality-assured herbal formulations, structured yoga and relaxation manuals, validated screening tools for stress and depression, and clearly defined referral algorithms for severe psychiatric cases—ensuring that Ayurveda complements rather than replaces conventional psychiatric care. Capacity building is equally important; AYUSH practitioners should receive structured training in Psychological First Aid, trauma-informed care, referral systems, documentation standards, and pharmacovigilance, while cross-training initiatives can strengthen interdisciplinary collaboration. Quality control mechanisms must include the use of GMP-certified products, systematic screening for herb–drug interactions, adverse event reporting systems, and strict adherence to informed consent protocols to maintain safety and credibility. Finally, structured monitoring indicators—such as reduction in stress scores, improvement in sleep parameters, patient satisfaction, and adverse event tracking—should be integrated into field operations, with operational research conducted during deployments to generate scalable and evidence-informed models for future disaster response.

- Expand AYUSH disaster guidelines to include standardized Ayurvedic interventions.
- Form joint response teams with modern and Ayurvedic practitioners.
- Support clinical trials to validate Ayurvedic practices in emergencies.
- Collaborate with WHO and global agencies to integrate Ayurveda into international disaster frameworks.

Evaluation

- Monitor outcomes such as infection control, psychological recovery, and resilience.

- Use data to refine and strengthen Ayurvedic disaster protocols.

Discussion:

Ayurveda's strengths lie in **preventive and supportive care**, particularly in resource-limited settings. Its emphasis on immunity, hygiene, and psychosocial well-being complements modern disaster medicine. However, challenges include:

- Lack of standardized emergency protocols.
- Limited scientific validation in acute care contexts.
- Need for integration into disaster response frameworks.

Ayurveda

- **Core Strengths:** Preventive care (*Swasthavritta*), toxicology (*Agad Tantra*), immunity-building (*Rasayana*), and psychosocial rehabilitation through yoga and meditation.
- **Role in Disasters:** Supportive care, rehabilitation, infection control, and stress management.
- **Limitations:** Primarily adjunctive; lacks standardized acute emergency protocols

Conclusion:

Ayurveda offers a culturally rooted, cost-effective, and holistic perspective that can meaningfully contribute to disaster management, particularly in strengthening preparedness, supporting recovery, and complementing modern emergency medicine. Disasters disrupt not only infrastructure and physical health but also the psychological and social fabric of communities, creating long-term emotional and behavioural consequences. With its emphasis on mind–body equilibrium, resilience, lifestyle regulation, and community-centered care, Ayurveda provides a supportive framework for post-disaster mental healing and rehabilitation. At the same time, its integration into national and international disaster policies must be systematic, evidence-informed, and ethically governed. Embedding Ayurvedic principles within structured

disaster response systems—supported by regulatory oversight, clinical standardization, and ongoing research—can enhance community resilience while maintaining safety and scientific credibility. A balanced and collaborative model that honours traditional knowledge alongside modern medical rigor holds the potential to broaden access to psychosocial support and contribute meaningfully to healing and recovery in the aftermath of crisis.

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