



## COMPREHENSIVE REVIEW ON MENTAL HEALTH FIRST AID IN EMERGENCY SERVICES

<sup>1</sup>Hadi Mohammed Almohammed, <sup>2</sup>Ahmed Hussain Saleh Alfaqir, <sup>3</sup>MAHDI SALEH MAHDI ALSHERYAH, <sup>4</sup>Ali Mohammed Nasser Al Mohammed, <sup>5</sup>Hassan Ali Maed Alhamamah, <sup>6</sup>Mohammad Mesfer Al Alabaalteheen, <sup>7</sup>Abdulaziz Mohammed Nasser Al-Mohamad, <sup>8</sup>Mohammed Hady Ali Alyami

<sup>1</sup>Ministry of Health, Saudi Arabia, [Hmalmohammed@moh.gov.sa](mailto:Hmalmohammed@moh.gov.sa)

<sup>2</sup>Ministry of Health, Saudi Arabia, [ahalfaqir@moh.gov.sa](mailto:ahalfaqir@moh.gov.sa)

<sup>3</sup>Ministry of Health, Saudi Arabia, [Msalsharyah@moh.gov.sa](mailto:Msalsharyah@moh.gov.sa)

<sup>4</sup>Ministry of Health, Saudi Arabia, [aalyami126@moh.gov.sa](mailto:aalyami126@moh.gov.sa)

<sup>5</sup>Ministry of Health, Saudi Arabia, [Halhamamh@moh.gov.sa](mailto:Halhamamh@moh.gov.sa)

<sup>6</sup>Ministry of Health, Saudi Arabia, [malabaalteheen@moh.gov.sa](mailto:malabaalteheen@moh.gov.sa)

<sup>7</sup>Ministry of Health, Saudi Arabia, [alyami33@moh.gov.sa](mailto:alyami33@moh.gov.sa)

<sup>8</sup>Ministry of Health, Saudi Arabia, [Malyami112@moh.gov.sa](mailto:Malyami112@moh.gov.sa)

### Abstract

Mental health issues among crisis specialists are recognized as serious issues. Mental well-being administrations Mental Health First Aid (MHFA) which may be a nursery of trust and compromise. This comprehensive research illustrates the potential of MHFA within the emergency office. Recent discoveries indicate that the MHFA program increases mindfulness, decreases disgrace, and energizes early supplication. Be that as it may, issues such as resource assignment and organizational amassing remain. It is suggested that MHFA be included in the preparation and proceed to be educated around the advance of the study.

**Keywords:** Mental Health First Aid, Emergency Services, Mental Health Awareness, Stigma Reduction, Early Intervention

### Introduction

Emergency service personnel often encounter high-stress situations that can lead to mental health challenges such as post-traumatic stress disorder (PTSD), depression, and anxiety. The stigma associated with mental health problems often deters individuals from seeking help, exacerbating these issues. Mental Health First Aid (MHFA) programs have emerged as a valuable resource to address these concerns. MHFA equips individuals with the skills to identify, understand, and respond to signs of mental illness. This review aims to assess the effectiveness of MHFA within emergency services contexts, examining its impact on knowledge acquisition, stigma reduction, and early intervention (Morganstein & Ursano 2020).



All the articles published by Chelonian Conservation and Biology are licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/) Based on a work at <https://www.acgpublishing.com/>

## Overview of Mental Health First Aid (MHFA)

Mental Health First Aid (MHFA) could be a training program to supply people with the information and abilities to begin helping individuals with or creating mental well-being issues. MHFA's essential mission is to raise awareness of mental well-being, diminish the disgrace encompassing mental illness, advance early mediation, and get to know people better. To begin with, established in Australia in 2001 by Betty Kitchener and Anthony Jorm, MHFA has picked up universal acknowledgment and has been adjusted to suit distinctive societies and goals.

## Definition and Objectives of MHFA

MHFA is often likened to traditional first aid for physical health emergencies, but instead focuses on mental health crises and issues. The program aims to achieve several key objectives:

- ✓ Advance mental well-being mindfulness: MHFA prepares members with mindfulness of common mental disorders, their signs and indications, chance components, and fundamental, down-to-earth suggestions. Through information and understanding of mental well-being issues, members can better understand when somebody is encountering mental well-being issues.
- ✓ Decreasing Shame: The greatest barrier to looking for assistance for mental well-being issues is the stigma related to mental illness. MHFA is committed to clearing up misguided judgments and misinterpretations about mental illness and making it more prominent and understood within the community. Through instruction and dialog, MHFA aims to create an environment where individuals feel secure looking for assistance without fear of judgment or discrimination.
- ✓ Advance Early Intercession: MHFA emphasizes the significance of early mediation in tending to mental well-being issues. By preparing members with the abilities and certainty to approach those in trouble, MHFA encourages opportune get-to-suitable treatment, eventually making strides for people with mental well-being issues.

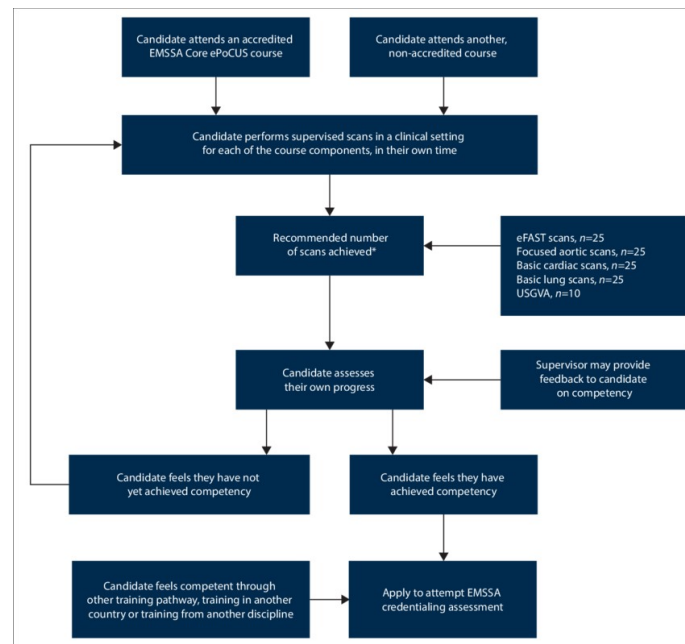
## Training Components and Curriculum

MHFA preparation, more often than not, comprises an 8-hour course instructed by a certified educator. This course covers an assortment of subjects related to mental well-being, mindfulness, and emergency meditation, including:

- ✓ Mental well-being Mindfulness: Members learn about mental well-being issues such as sadness, uneasiness, psychosis, and substance misuse. This incorporates understanding these maladies' prevalence, signs, and indications and their effects on people and communities (Morganstein & Ursano 2020).
- ✓ Variables and anticipation: MHFA examines the numerous components that contribute to mental well-being issues and preventive measures that can advance recuperation and sound living. This incorporates talk of psychology's organic, mental, and social perspectives.

- ✓ Emergency Mediation Aptitudes: Members learn the strategies essential to supply, to begin with, help to individuals encountering mental well-being issues, including how to evaluate hazards, tune in without ceasing to apologize, and give fitting help. MHFA emphasizes the significance of understanding, tuning in, and keeping up boundaries when supporting struggling people.
- ✓ Referrals: MHFA gives data on mental well-being care and administrations accessible within the community, counting helplines, counseling services, and back bunches. Members learn how to associate individuals in need with suitable assistance.

**Figure 2: Pathway for training and credentialing in emergency point-of-care**



(Herath et. al 2022).

*Pathway for training and credentialing in emergency point-of-care ultrasound. (EMSSA = Emergency Medicine Society of South Africa; ePoCUS = emergency point-of-care ultrasound; eFAST = extended focused assessment with sonography in trauma; USGVA = ultrasound-guided vascular access.) (\*This number does not necessarily have to be achieved to trigger a competency assessment.) (Herath et. al 2022)*

### Adaptations for Emergency Services Personnel

MHFA's program may be adjusted to meet crisis laborers' interesting needs and challenges. Crisis administrations incorporate specialists, firefighters, police, and crisis therapeutic faculty. These changes will include:

- Customized substance: MHFA preparing for crisis responders will incorporate particular examples and cases considered significant to their roles and experiences. This makes a

difference when members apply what they have learned to real-life circumstances they will experience within the field.

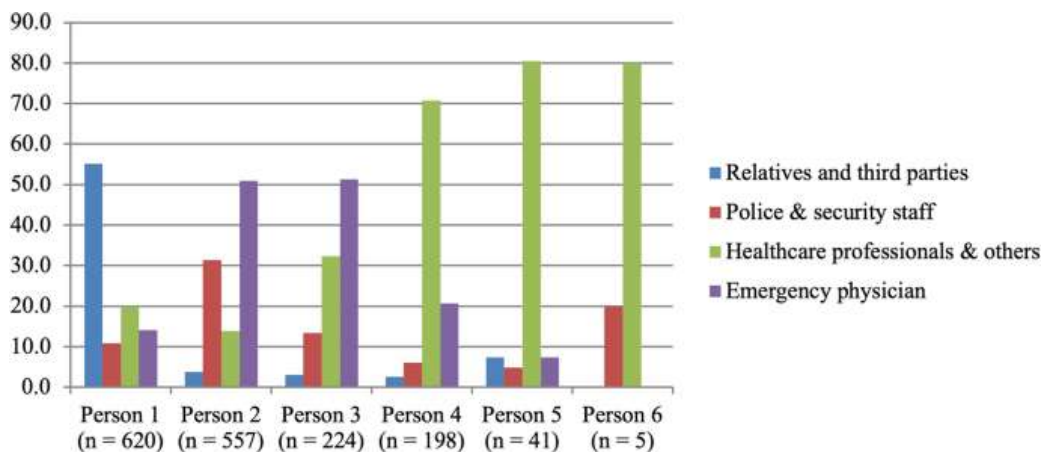
- Center on self-care: Given the upsetting nature of the work, MHFA's preparation for crisis responders regularly incorporates self-care and sets up measures. This will incorporate methodologies for overseeing push, avoiding damage, and finding back when needed.
- Collaborative organizations: MHFA bolsters the advancement of peer-to-peer organizations inside crisis administration organizations where colleagues can give casual back and support to each other, cultivating a culture of openness and understanding of mental illness.

In summary, Mental Well-being to Begin with Aid (MHFA) is a viable instructional program outlined to extend mental well-being mindfulness, decrease shame, and advance early mediation in mental well-being. MHFA gives people the information and certainty to bolster others with mental well-being issues by combining instruction, aptitude advancement, and community engagement. Upgrades to crisis reaction faculty guarantee MHFA preparation remains current and viable in tending to the interesting challenges confronting the open. By contributing to MHFA preparation and crisis reaction, organizations can offer assistance and create a more secure and steady environment for their workers and the communities they serve (Saragih et. al 2021).

### Prevalence of Mental Health Issues in Emergency Services

Crisis laborers, counting specialists, firefighters, police officers, and crisis restorative staff confront one-of-a-kind challenges and stressors within the working environment. The nature of their exercises regularly exposes them to traumatic occasions, upsetting circumstances, and long-term pressure, which can influence their mental well-being. Understanding the predominance of mental well-being issues in this group and the factors that impact them is typically imperative for planning compelling interventions and support (Saragih et. al 2021).

**Figure 2: Psychiatric Emergencies in the Community: Characteristics and Outcome**



(Ransing et. al 2020).

### **Statistics on Mental Health Disorders among Emergency Services Personnel:**

- ✓ Post-Traumatic Post disorder (PTSD): Crisis responders are at risk of creating PTSD due to the introduction of injuries such as mishaps, crises, and pulverization. It appears that the rate of PTSD among crisis responders ranges from 6 to 32 percent. This rate is higher than that of the general population.
- ✓ Misery and uneasiness: Tall requests on crisis administrations can increase discouragement and uneasiness. Crisis responders' involvement indicates misery and uneasiness at higher rates than the general public, with gauges extending from 10 to 37 percent.
- ✓ Substance Misuse: Adapting with push and injury may cause a few crisis specialists to utilize negative coping procedures, including substance misuse. It has appeared that alcohol and sedative use are higher among crisis responders compared to the general population.
- ✓ Suicide risk: Crisis responders, too, have a greater chance of suicide than the general public. Components such as injury, constant stretching, and working environment culture may increase suicide rates in this group.

### **Factors Contributing to Mental Health Challenges in this Population:**

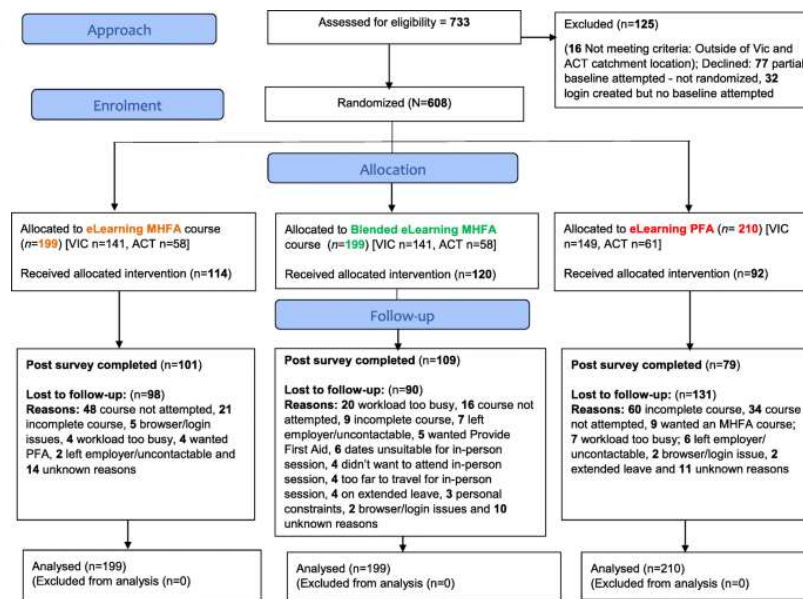
- ✓ Fiascos: Crisis responders frequently confront traumatic occasions such as mishaps, crises, and normal catastrophes. Rehashed injuries increase the chance of post-traumatic stress disorder (PTSD) and other mental disorders.
- ✓ An unpleasant work environment: crisis divisions are upsetting; workers regularly confront life-or-death circumstances, which cannot happen. A continued push can lead to mental sickness, uneasiness, sadness, and freeze attacks.
- ✓ Disgrace and culture of quiet: Despite expanding mindfulness of mental well-being issues, disgrace related to mental illness exists in numerous social orders. It is reasonable for crisis administrations. Fear of shame and its results can prevent individuals from looking for assistance or unveiling their battles, which can lead to mental well-being issues being underreported and untreated.
- ✓ Need for mental well-being assets: Constrained access to mental well-being administrations and assets in crisis rooms can lead to misery. Boundaries to looking for assistance, such as protection issues and transportation issues, can prevent individuals from accepting fitting care.

Crisis laborers' involvement is more noteworthy in terms of mental trouble due to the unique challenges and push related to their occupations. Understanding the predominance of mental well-being issues in this group and the components that impact it is imperative for the use of mediation and bolstering plans. By tending to disgrace, progressing to mental well-being administrations, and advancing a sound culture, crisis reaction organizations can offer assistance, progress the mental well-being needs of their representatives, and move forward in general flexibility and performance.

## Efficacy of MHFA Training

Mental Wellbeing to Begin with Help (MHFA) preparation has been recognized as a successful intervention to help people distinguish and adapt to mental well-being issues. This chapter investigates the adequacy of MHFA preparation for crisis response personnel. It centers on its effect on data security, certainty in recognizing mental well-being issues, and decreasing the disgrace related to mental illness (Buselli et. al 2021).

**Figure 3: Effectiveness of eLearning and blended modes of delivery of Mental Health First Aid training**



(Barabari & Moharamzadeh 2020).

## Studies Assessing the Impact of MHFA Training on Emergency Services Personnel:

Several studies have inspected the adequacy of MHFA preparedness for crisis responders, counting specialists, firefighters, police, and crisis doctors. These ponder have found positive results after MHFA preparation, such as expanded mental well-being mindfulness, expanded certainty in the bolster, and increased self-efficacy, which affect mental well-being. MHFA preparation can lead to noteworthy enhancements in these ranges for crisis responders.

For illustration, a study by Kitchener and Jorm (2002) found that members who completed the MHFA prepared a more prominent understanding of mental health and expanded their self-confidence to assist individuals with mental well-being issues. These discoveries are also upheld by the investigation by Bond and colleagues (2019), who reported maintained advancement in crisis patients' mental well-being information and confidence within the months taken after graduation from MHFA (Said & Chiang 2020).

## Improvements in Knowledge and Confidence in Identifying Mental Health Issues:



One of the objectives of MHFA preparation is to diminish the shame encompassing mental well-being and advance a superior understanding within the community. It appears that MHFA preparation is viable in dispensing with mental health-related generalizations and generalizations, in this manner diminishing disgrace and segregation for patients. For example, an orderly audit by Morgan and colleagues (2018) assessed the impact of MHFA preparation on mental well-being, lessening disgrace for individuals worldwide (Khanna & Kaur 2020)...

### **Reductions in Stigma Associated with Mental Illness:**

Although considered successful, Mental Wellbeing to Begin with Help (MHFA) preparation is easy to execute in crisis reaction offices. This segment analyzes key challenges, counting asset and budgetary limitations, authority and back, and obstructions to getting to MHFA preparation.

### **Resource Constraints and Funding Limitations**

One of the greatest challenges in actualizing MHFA preparation in crisis reaction organizations is restricted budget and monetary limitations. Planning and conveying an MHFA preparation program requires monetary help to cover educational expenses, preparation materials, space rental, and authoritative costs. In numerous cases, crisis reaction offices work on constrained budgets, making distributing satisfactory assets to mental well-being programs troublesome (Mallet et. al 2021).

Competing needs inside organizations may result in constrained subsidizing for mental well-being administrations compared to other operational needs. This may ruin the development and supportability of MHFA preparation, particularly in expansive organizations with huge offices and staff.

### **Implementation Challenges**

Despite its recognized effectiveness, the implementation of Mental Health First Aid (MHFA) training within emergency services organizations is not without its challenges. This section examines some of the key implementation challenges, including resource constraints and funding limitations, organizational culture and support, and barriers to accessing MHFA training.

### **Resource Constraints and Funding Limitations:**

One of the primary challenges in implementing MHFA training within emergency services organizations is resource constraints and funding limitations. Developing and delivering MHFA training programs require financial resources to cover costs such as instructor fees, training materials, venue rentals, and administrative expenses. In many cases, emergency services organizations operate within tight budgets, making it challenging to allocate sufficient resources for mental health training initiatives (Mallet et. al 2021).

Furthermore, competing priorities within organizations may result in limited funding for mental health programs compared to other operational needs. This can hinder the scalability and

sustainability of MHFA training initiatives, particularly in larger organizations with diverse service areas and staffing levels.

### **Organizational Culture and Support:**

The organization affects the success of MHFA preparation in crisis reaction organizations. Culture and bolster. In a few organizations, there may be a need for information or understanding of the significance of mental well-being instruction, leading to resistance or doubt among MHFA pioneers. Also, culture and demeanors around mental well-being have the potential to form shame and repress open dialogue about mental health (Talevi et. al 2020).

Effective MHFA preparation requires solid administration and organizational commitment to advance mental well-being, mindfulness, and back. This incorporates creating a culture of openness and understanding and supporting people encountering mental well-being challenges. Organizational pioneers play an imperative part in advancing mental well-being, distributing assets, and making approaches to oversee worker health.

### **Barriers to Accessing MHFA Training:**

Arranging for an MHFA can present critical challenges, particularly for inaccessible or underserved crisis responders. The need for instructors and planning programs can lead to long-term maintenance or issues within the field that prevent delegates from planning for the MHFA. Furthermore, scheduling clashes and work requests can make it troublesome for workers to plan work during standard work hours (San Juan et. al 2021).

Transportation issues such as transportation costs, childcare commitments, and negative sentences may prevent a few from planning to go to MHFA to arrange the Emergency Administration Center. These issues adversely affect crippled bunches and populations, missing assets or backs, leading to aberrations in mental well-being, mindfulness, and support.

Removing limitations on MHFA arrangements requires a multifaceted approach that incorporates emergency responders' unique needs and circumstances. This may be combined with adaptable conveyance techniques, such as online or mixed learning models, to suit particular errands and be intuitive. Working with community partners and utilizing existing frameworks can give administrations and grow MHFA's commands in underserved areas (Zhu et. al 2021).

Finally, to guarantee MHFA is ready to unravel issues, organizations must overcome numerous challenges, counting imperatives, conventions, and boundaries. Tackling these issues requires the collaboration of lead organizations, policymakers, and community accomplices to prioritize mental well-being administrations, designate suitable assets, and create a culture of support and cooperation. By tending to these issues, organizations can better prepare their workers with the information and abilities fundamental to dealing with mental well-being challenges and bolstering the well-being of all people (Lawn et. al 2020).

### **Future Directions**

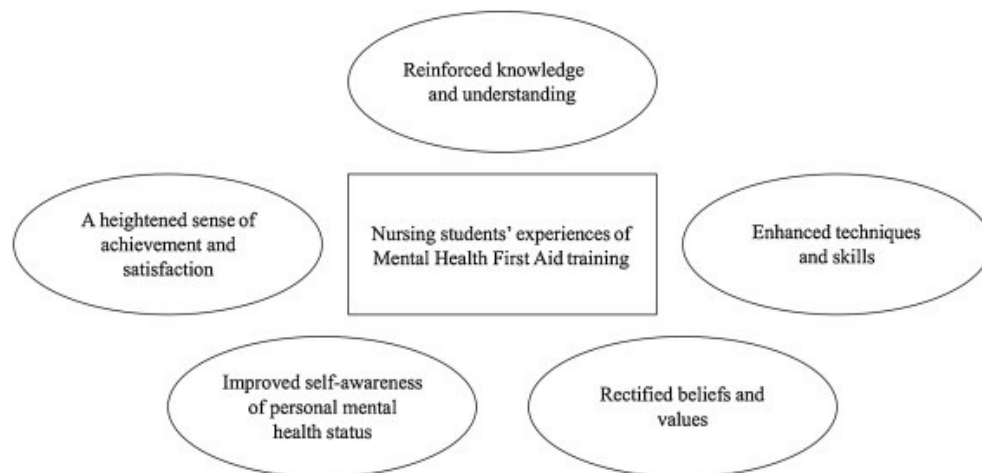


Mental well-being begins with Offer Assistance (MHFA), which is considered a critical device to advance mental well-being and mindfulness and enable individuals when there are issues. Future headings should be considered for integration, assessment, and help should Ming matters. MHFA arrangement (Wang et. al 2022). This chapter distinguishes eight key zones of advance that take after the current standard for conducting MHFA preparation, counting the integration of MHFA into arranging programs, progressing investigation into long-term result assessments, and studying proprietors.

### **Integrating MHFA into the preparation process of crisis personnel:**

In the long term, there will be a need to coordinate MHFA in preparing crisis faculty. Given the high prevalence of mental well-being issues among these groups and the vital role they play in reacting to these issues, MHFA preparation should be considered a critical portion of their development. By joining MHFA in the preparation process, crisis reaction organizations can guarantee that all staff get total preparation and instruction in crisis reaction aptitudes, mental well-being, and emergency intercession procedures. This makes a difference; normalize conversations almost too mental well-being, diminish shame, and cultivate a culture of back and understanding inside the organization (Escandón et. al 2021).

**Figure 4: Nursing students' experiences of mental health first aid training**



*(Laufs & WA seem 2020).*

Additionally, MHFA's support for existing crisis preparation programs, such as begin with Help, CPR, and fiasco preparation, may be expanded. The viability of these programs can be expanded by tending to the well-being needs of members and those they serve (Lawn et. al 2020).

### **Ongoing Research to Evaluate the Long-Term Impact of MHFA:**

Even though numerous ponders appear to have short-term impacts on MHFA preparing to move forward in mental well-being, certainty, and behavior, more inquiry is required to assess the long-

term effect of MHFA on crisis laborers and the communities they serve. Long-term follow-up with members Longitudinal ponders can give knowledge into the enduring impacts of MHFA mental well-being instruction, including decreasing shame, expanding help-seeking behavior, and progressing health. Research should also examine the effect of MHFA preparation on organizational results in areas such as worker maintenance, work fulfillment, and execution. Understanding how MHFA preparation contributes to organizational quality and viability can legitimize proceeded speculation in mental well-being programs in service organizations whenever possible (Wyckoff et. al 2022).

### **Find other ways to make MHFA training more effective:**

As innovation progresses, openings emerge to discover other ways to make it more viable: MHFA preparation, particularly in coming to the underserved and tending to get to issues. Online and mixed learning can provide adaptable preparation to meet crisis responders' changing needs and plans. Virtual reality recreations and intelligently prepared modules will provide a comprehensive learning encounter to increase engagement and maintenance of imperative content.

Additionally, collaborating with community accomplices such as mental well-being organizations, schools, and nearby governments can offer assistance and extend access to this data. MHFA teaches and strengthens mental well-being in communities. By utilizing imaginative strategies to convey MHFA preparation and crisis reaction, organizations can reach a broader group of onlookers, increase participation, and eventually make strides. Benefits for people with mental well-being issues

The joining of MHFA into the instructive handle is progressing. Investigate to assess long-term impacts. It is pivotal to explore long-term and unused delivery methods to improve the adequacy and reach of MHFA in crisis reaction organizations. Through the significance of well-being, mindfulness, and back, crisis specialists can better react to the desires of individuals in emergencies and take action for a more beneficial, more grounded society (Madjunkov et. al 2020)..

### **Conclusion**

Mental Well-being to Begin with Help (MHFA) programs can address mental health issues among crisis therapeutic staff. MHFA preparation increases mindfulness, diminishes shame, and energizes early meditation. In any case, issues such as asset allotment and organizational support had to be addressed for far-reaching and viable utilization. Future endeavors should center on integrating MHFA into the preparation process to guarantee that all crisis responders get fit in mental well-being preparation. In expansion, ceaseless investigation is critical to extend efficiency, move forward, bolster frameworks, and create a solid working environment for individuals. By taking these steps, we can improve the mental well-being of crisis responders so they can react to challenges with patience and compassion.

### **Recommendations**

1. Basic organizations and crisis reaction organizations ought to prioritize preparation. MHFA Back programs (Mechili et. al 2021).
2. MHFA should be part of the preparedness program for all crisis responders.
3. Organizations ought to create a steady and anti-stigmatizing environment that energizes open dialog around mental illnesses (Mohsan et. al 2022).
4. More investigation is required to assess the long-term viability of MHFA and to investigate modern strategies for conveying and preparing.

## Reference

- Lawn, S., Roberts, L., Willis, E., Couzner, L., Mohammadi, L., & Goble, E. (2020). The effects of emergency medical service work on the psychological, physical, and social well-being of ambulance personnel: a systematic review of qualitative research. *BMC psychiatry*, 20, 1-16. <https://link.springer.com/article/10.1186/s12888-020-02752-4>
- Wyckoff, M. H., Singletary, E. M., Soar, J., Olasveengen, T. M., Greif, R., Liley, H. G., & Berg, K. M. (2022). 2021 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with treatment recommendations: summary from the basic life support; advanced life support; neonatal life support; education, implementation, and teams; first aid task forces; and the COVID-19 Working Group. *Circulation*, 145(9), e645-e721. <https://www.ahajournals.org/doi/abs/10.1161/CIR.0000000000001017>
- Madjunkov, M., Dire, M., & Librach, C. (2020). A comprehensive review of the impact of COVID-19 on human reproductive biology, assisted reproduction care and pregnancy: a Canadian perspective. *Journal of ovarian research*, 13(1), 140. <https://link.springer.com/article/10.1186/s13048-020-00737-1>
- Mechili, E. A., Saliq, A., Kamberi, F., Girvalaki, C., Peto, E., Patelarou, A. E., & Patelarou, E. (2021). Is the mental health of young students and their family members affected during the quarantine period? Evidence from the COVID-19 pandemic in Albania. *Journal of psychiatric and mental health nursing*, 28(3), 317-325. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jpm.12672>
- Mohsan, S. A. H., Khan, M. A., Noor, F., Ullah, I., & Alsharif, M. H. (2022). Towards the unmanned aerial vehicles (UAVs): A comprehensive review. *Drones*, 6(6), 147. <https://www.mdpi.com/2504-446X/6/6/147>
- Laufs, J., & Waseem, Z. (2020). Policing in pandemics: A systematic review and best practices for police response to COVID-19. *International journal of disaster risk reduction*, 51, 101812. <https://www.sciencedirect.com/science/article/pii/S2212420920313145>

- Escandón, K., Rasmussen, A. L., Bogoch, I. I., Murray, E. J., Escandón, K., Popescu, S. V., & Kindrachuk, J. (2021). COVID-19 false dichotomies and a comprehensive review of the evidence regarding public health, COVID-19 symptomatology, SARS-CoV-2 transmission, mask wearing, and reinfection. *BMC infectious diseases*, *21*(1), 1-47. <https://link.springer.com/article/10.1186/s12879-021-06357-4>
- Wang, R., Huang, X., Wang, Y., & Akbari, M. (2022). Non-pharmacologic approaches in preoperative anxiety, a comprehensive review. *Frontiers in public health*, *10*, 854673. <https://www.frontiersin.org/articles/10.3389/fpubh.2022.854673/full>
- Zhu, C., Huang, S., Evans, R., & Zhang, W. (2021). Cyberbullying among adolescents and children: a comprehensive review of the global situation, risk factors, and preventive measures. *Frontiers in public health*, *9*, 634909. <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2021.634909/full>
- San Juan, N. V., Aceituno, D., Djellouli, N., Sumray, K., Regenold, N., Syversen, A., & Vindrola-Padros, C. (2021). Mental health and well-being of healthcare workers during the COVID-19 pandemic in the UK: contrasting guidelines with experiences in practice. *BJPsych open*, *7*(1), e15. <https://www.cambridge.org/core/journals/bjpsych-open/article/mental-health-and-wellbeing-of-healthcare-workers-during-the-covid19-pandemic-in-the-uk-contrasting-guidelines-with-experiences-in-practice/B513349E66E11CE03165F5E394A4D6C4>
- Talevi, D., Socci, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., & Pacitti, F. (2020). Mental health outcomes of the CoViD-19 pandemic. *Rivista di psichiatria*, *55*(3), 137-144. <https://www.rivistadipsichiatria.it/archivio/3382/articoli/33569>
- Mallet, J., Dubertret, C., & Le Strat, Y. (2021). Addictions in the COVID-19 era: Current evidence, future perspectives a comprehensive review. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *106*, 110070. <https://www.sciencedirect.com/science/article/pii/S0278584620303869>
- Buselli, R., Corsi, M., Veltri, A., Baldanzi, S., Chiumiento, M., Del Lupo, E., & Cristaudo, A. (2021). Mental health of Health Care Workers (HCWs): a review of organizational interventions put in place by local institutions to cope with new psychosocial challenges resulting from COVID-19. *Psychiatry research*, *299*, 113847. <https://www.sciencedirect.com/science/article/pii/S016517812100144X>
- Khanna, A., & Kaur, S. (2020). Internet of things (IoT), applications and challenges: a comprehensive review. *Wireless Personal Communications*, *114*, 1687-1762. <https://link.springer.com/article/10.1007/s11277-020-07446-4>

- Barabari, P., & Moharamzadeh, K. (2020). Novel coronavirus (COVID-19) and dentistry—A comprehensive review of literature. *Dentistry journal*, 8(2), 53. <https://www.mdpi.com/2304-6767/8/2/53>
- Said, N. B., & Chiang, V. C. (2020). The knowledge, skill competencies, and psychological preparedness of nurses for disasters: A systematic review. *International emergency nursing*, 48, 100806. <https://www.sciencedirect.com/science/article/pii/S1755599X19300928>
- Ransing, R., Adiukwu, F., Pereira-Sanchez, V., Ramalho, R., Orsolini, L., Teixeira, A. L. S., & Kundadak, G. K. (2020). Mental health interventions during the COVID-19 pandemic: a conceptual framework by early career psychiatrists. *Asian journal of psychiatry*, 51, 102085. <https://www.sciencedirect.com/science/article/pii/S1876201820301969>
- Morganstein, J. C., & Ursano, R. J. (2020). Ecological disasters and mental health: causes, consequences, and interventions. *Frontiers in psychiatry*, 11, 489158. <https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2020.00001>
- Stevellink, S. A., Pernet, D., Dregan, A., Davis, K., Walker-Bone, K., Fear, N. T., & Hotopf, M. (2020). The mental health of emergency services personnel in the UK Biobank: a comparison with the working population. *European journal of psychotraumatology*, 11(1), 1799477. <https://www.tandfonline.com/doi/abs/10.1080/20008198.2020.1799477>
- Herath, H. M. K. K. M. B., & Mittal, M. (2022). Adoption of artificial intelligence in smart cities: A comprehensive review. *International Journal of Information Management Data Insights*, 2(1), 100076. <https://www.sciencedirect.com/science/article/pii/S2667096822000192>
- Saragih, I. D., Tonapa, S. I., Saragih, I. S., Advani, S., Batubara, S. O., Suarilah, I., & Lin, C. J. (2021). Global prevalence of mental health problems among healthcare workers during the Covid-19 pandemic: a systematic review and meta-analysis. *International journal of nursing studies*, 121, 104002. <https://www.sciencedirect.com/science/article/pii/S0020748921001498>
- World Health Organization. (2022). *mental health and COVID-19: early evidence of the pandemic's impact: scientific brief, 2 March 2022* (No. WHO/2019-nCoV/Sci\_Brief/Mental\_health/2022.1). World Health Organization. <https://apps.who.int/iris/bitstream/handle/10665/352189/WHO-2019-nCoV-Sci-Brief-Mental-health-2022.1-eng.pdf>
- Mehta, O. P., Bhandari, P., Raut, A., Kacimi, S. E. O., & Huy, N. T. (2021). Coronavirus disease (COVID-19): comprehensive review of clinical presentation. *Frontiers in Public Health*, 8, 582932. <https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2020.582932>

- Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., Vaughan, A. D., Anderson, G. S., & Camp, R. D. (2020). Mental health training, attitudes toward support, and screening positive for mental disorders. *Cognitive Behaviour Therapy*, *49*(1), 55-73. <https://www.tandfonline.com/doi/abs/10.1080/16506073.2019.1575900>
- Triggle, C. R., Bansal, D., Ding, H., Islam, M. M., Farag, E. A. B. A., Hadi, H. A., & Sultan, A. A. (2021). A comprehensive review of viral characteristics, transmission, pathophysiology, immune response, and management of SARS-CoV-2 and COVID-19 as a basis for controlling the pandemic. *Frontiers in immunology*, *12*, 631139. <https://www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2021.631139/full>
- Kang, L., Ma, S., Chen, M., Yang, J., Wang, Y., Li, R., & Liu, Z. (2020). Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study. *Brain, behavior, and immunity*, *87*, 11-17. <https://www.sciencedirect.com/science/article/pii/S0889159120303482>
- Stuijzand, S., Deforges, C., Sandoz, V., Sajin, C. T., Jaques, C., Elmers, J., & Horsch, A. (2020). Psychological impact of an epidemic/pandemic on the mental health of healthcare professionals: a rapid review. *BMC public health*, *20*, 1-18. <https://link.springer.com/article/10.1186/s12889-020-09322-z>
- Muller, A. E., Hafstad, E. V., Himmels, J. P. W., Smedslund, G., Flottorp, S., Stensland, S. Ø., ... & Vist, G. E. (2020). The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatry research*, *293*, 113441. <https://www.sciencedirect.com/science/article/pii/S0165178120323271>
- Mongelli, F., Georgakopoulos, P., & Pato, M. T. (2020). Challenges and opportunities to meet the mental health needs have underserved and disenfranchised populations in the United States. *Focus*, *18*(1), 16-24. <https://focus.psychiatryonline.org/doi/abs/10.1176/appi.focus.20190028>