

COVID-19 and Healthcare Professionals: The Psychological Impact of the Pandemic on Healthcare Professionals and the Use of EMDR Early Interventions

Juliane Tortes Saint-Jammes

Camea, Gradignan, France

Equipe IETO, INSERM U1219, Université de Bordeaux-ISPED, Bordeaux Cedex, France

CUMP Zone Sud-Ouest, Bordeaux Cedex, France

Olivier Sorel

CUMP Zone Sud-Ouest, Bordeaux Cedex, France

IOS, Saint-Avertin, France

Eugénie Zara-Jouillat

Edephe, Nantes, France

Charles-Henry Martin

CUMP Zone Sud-Ouest, Bordeaux Cedex, France

Cédric Gil-Jardiné

Equipe IETO, INSERM U1219, Université de Bordeaux-ISPED, Bordeaux Cedex, France

University Hospital of Bordeaux, Pole of Emergency Medicine, Bordeaux, France

Alix Lavandier

Camea, Gradignan, France

CUMP Zone Sud-Ouest, Bordeaux Cedex, France

Laboratoire APEMAC UR 4360, Université de Lorraine, Metz, France

Recent research has provided new information on the impact of COVID-19 and previous pandemics on the mental health of healthcare professionals (HCP). Several studies have found that HCP are greatly affected by pandemics and may develop anxiety disorders, mood disorders, and posttraumatic stress disorder. The stress caused by the intense working conditions and the fear of contracting and transmitting the virus are major vulnerability factors for these workers, increasing their risk of developing a mental health condition. It is therefore essential to provide appropriate support to this population in order to reduce and avoid the psychological burden of the current pandemic on their mental health. Considering the data previously published on the COVID-19 pandemic and past epidemics, the present article aims to provide an epidemiological review of the psychological impact of a pandemic on healthcare professionals. Furthermore, it examines, from a theoretical perspective, whether EMDR early interventions (EEI) may constitute an effective solution in order to provide psychological support to HCP in hospitals. Lastly, the article will identify various protocols for EEI, which, it argues, should be the approaches of choice for providing early support following a potentially traumatic event.

Keywords: pandemic; COVID-19; EMDR; early intervention; healthcare professionals

SARS-CoV-2 virus, which causes coronavirus disease 2019 (COVID-19), has led to a global pandemic since the first quarter of 2020. This unprecedented situation has required health services to adapt and has placed great pressure on healthcare professionals (HCP). It is therefore understandable that HCP have been greatly affected by the pandemic (Mattila et al., 2021; Romero et al., 2020; Vignaud & Prieto, 2020; Xiaoming et al., 2020). Overwhelmed hospitals, extra hours, and the increasing number of hospitalized individuals and of deaths were all stressful and potentially traumatic situations that HCP had to cope with (Greenberg et al., 2020; Mattila et al., 2021; Vizheh et al., 2020). Fortunately, major changes in medical practice in recent years have led to a strong interest in understanding the mental and emotional health of HCP (Chan & Huak, 2004; Kisely et al., 2020).

Impact of Previous Epidemics on the Mental Health of Healthcare Professionals

Studies conducted during recent epidemics (SARS, MERS-CoV, Ebola) have identified the occurrence of psychiatric disorders among hospital workers (Hughes, 2015; Lancee et al., 2008; Shultz et al., 2015). One of the well-documented epidemics of the last decade was SARS, an emerging infectious disease. A study found that 89% of HCP reported psychological disturbances during the SARS epidemic (Vizheh et al., 2020). Studies have examined the mental health impact of the epidemic in various hospital professions, such as nursing assistants, nurses, doctors, anaesthetists, social workers, physiotherapists, and other paramedical workers (Chan & Huak, 2004; Ho et al., 2005; Lancee et al., 2008). Researchers also examined workers in intensive care units, emergency rooms, and SARS units (Ho et al., 2005). Previous studies indicate that a history of psychiatric disorders is a frequent vulnerability factor for HCP to develop a mental disorder in the context of a pandemic (Lancee et al., 2008). For example, a study conducted in Canada indicated that prior to the SARS epidemic, 30% of healthcare professionals met diagnostic criteria for at least one lifetime disorder, such as major depression, anxiety disorders (i.e., panic disorder, generalized anxiety disorder, social phobia, agoraphobia, specific phobias), somatoform disorders, and substance use disorders (Lancee et al., 2008). The study found that 1 to 2 years after the end of the SARS epidemic in Canada, the rate of recent major depressive episodes among HCP increased by 4% and the rate of posttraumatic stress disorder (PTSD)

increased by 2%. The incidence of any psychiatric disorder increased by 5%. Similarly, Chan and Huak (2004) confirmed that there was a significant impact of the SARS epidemic on the emotional well-being of hospital workers. The study found a significant 12% increase in PTSD among doctors and nurses after the SARS pandemic. Interestingly, it did not find a significant difference in mental health between HCP exposed to SARS patients and those who were not exposed to that population. This suggests that the SARS epidemic was experienced by many HCP as a traumatic life event, independently of any exposure to SARS-infected individuals (Chan & Huak, 2004). The previous findings may vary by country and by the personal impact of the virus on HCP: workers who contracted SARS were significantly more likely to have PTSD than uninfected HCP (Ho et al., 2005). Furthermore, studies consistently indicate that HCP were afraid of contracting SARS but equally or even more afraid of infecting others around them (Cheung & Ho, 2004; Ho et al., 2002, 2003, 2004).

It was also found that HCP who were not infected with SARS at the peak of the epidemic reported a higher fear of being infected than HCP who had contracted and recovered from SARS (Ho et al., 2005). This result suggests that during a pandemic, fear of infection is likely to be a major stressor.

More recently, a literature review examined 61 studies on psychiatric disorders in healthcare professionals during and after viral epidemics (Ricci-Cabello et al., 2020). The study found a prevalence of 45% for anxiety, 38% for depression, 31% for acute stress disorder (ASD), and 19% for PTSD. Epidemics significantly affect working conditions and thus lead to a strong perception of danger, exacerbated by uncertainty (Maunder et al., 2003).

The similarities in the spread of SARS-CoV-2 with SARS (e.g., aero-respiratory contagion acting on the same characteristics of age and gender) suggest that the conditions previously described in HCP may be similar to those that may result from the current COVID-19 pandemic (Roychoudhury et al., 2020).

Impact of the COVID-19 Pandemic on the Mental Health of Healthcare Professionals

Since the onset of COVID-19, new studies have investigated the impact of the pandemic on the mental health of HCP (Greenberg et al., 2020; Luceño-Moreno et al., 2020; Mattila et al., 2021; Romero et al., 2020; Xiaoming et al., 2020). Research indicates that COVID-19 pandemic has increased anxiety symptoms among HCP, even in the absence of any pre-existing

mental health condition (Mattila et al., 2021; Vignaud & Prieto, 2020). For instance, in Finland, 60% of hospital workers felt that work-related stress increased during the COVID-19 pandemic (Mattila et al., 2021). PTSD among HCP ranged from 13.8% to 80%, leading to conclude that stress levels among Finnish hospital workers were high despite the low number of COVID-19 patients in the country (Mattila et al., 2021; Xu et al., 2020). A recent study found that work-related anxiety in hospitals was not directly associated with the number of COVID-19 patients or with their treatment plan, but rather with the sudden and unexpected nature of the event, requiring adjustments in hospital procedures (Mattila et al., 2021). In addition, the fear of an unknown threat may cause acute anxiety. This is consistent with the findings of Xu et al. (2020).

Romero et al. (2020) assessed the psychological impact of the COVID-19 pandemic on HCP in Spain. Perceived stress was highest among workers who had direct contact with COVID-19 patients, such as those in respiratory medicine, and among those who were at risk of exposing their families to the illness. Workers in emergency medicine were also significantly affected (Portero de la Cruz et al., 2020). A study indicated that the higher the incidence of the disease, the more stressed HCP felt (Xiao et al., 2020). The results also showed that 56.6% of HCP presented with posttraumatic stress symptoms, 58.6% with an anxiety disorder (of which 20.7% were severe), 46% with a depressive disorder, and 41% with emotional exhaustion.

Several risks for the development of PTSD, an anxiety disorder or depression in HCP have been identified, including being young, being female, working in a university hospital, experiencing issues in collaborating with colleagues, having difficulties in maintaining concentration at work, having a heavy physical and psychological workload, and having a fear of being infected at work (Mattila et al., 2021; Romero et al., 2020). Having high emotional exhaustion and depersonalization scores were also risk factors for these three disorders. Recent research indicates that one of the biggest concerns for HCP is the possibility of infecting others, especially family members; resilience, however, would be a protective variable that reduces the risk of developing symptoms (Luceño-Moreno et al., 2020).

The COVID-19 pandemic has weakened the resilience of HCP (Luceño-Moreno et al., 2020; Zhu et al., 2020). Several studies confirm that the COVID-19 crisis has led to significant emotional, physical, and psychological difficulties (i.e., depression, anxiety, PTSD,

insomnia, and psychosomatic symptoms) among HCP (Ballesio et al., 2020; Kisely et al., 2020; Luo et al., 2020). Other psychological consequences for HCP were increased alcohol consumption and misuse (El-Hage et al., 2020). A study on the psychological consequences of the COVID-19 pandemic indicates a prevalence of 14.5% for anxiety, 8.9% for depression, and 7.7% for PTSD (Tan et al., 2020). Similar results were observed in a sample of nearly 1,000 frontline HCP in Wuhan (Kang et al., 2020).

Considering that the percentage of hospital workers who seek psychological help is less than 1% (Xiaoming et al., 2020), it seems important to provide adapted and targeted solutions to healthcare professionals. In the study by Romero et al. (2020), HCP who felt in need of psychological support, but did not have the time to seek it, showed a higher degree of stress. It is necessary that effective measures be implemented to protect the mental health of HCP and counter any potential short- or long-term effects of the pandemic (Ehrlich et al., 2020). New therapeutic approaches, such as online support, mindfulness, relaxation therapies, may play a promising role when time constraints are present (Xiao et al., 2020; Yang et al., 2020).

EMDR Therapy

EMDR is an integrative psychotherapeutic approach, which is client centered. It focuses on adverse life experiences of clients, their resources and their current life context. It is a neuro-psycho-biological approach based on one's natural healing process, the information processing system (Pagani et al., 2012). It is based on the hypothesis that present symptoms come from unprocessed physiologically stored traumatic memories. EMDR therapy was discovered fortuitously in 1987 by Francine Shapiro, an American psychologist and member of the Mental Research Institute in Palo Alto, California (Shapiro, 2001).

The effectiveness of EMDR has been scientifically proven and recognized worldwide since 1989 by several randomized controlled studies in the treatment of post-traumatic disorders. EMDR therapy is officially recommended for the treatment of this disorder since 2004 by the American Psychiatric Association and since 2013 by the World Health Organization. It is a three-pronged approach (i.e., past, present, and future) that allows the reprocessing of dysfunctionally stored memories by activating the adaptive information processing through eye movements. The standard EMDR therapy protocol takes place in eight phases:

- Phase 1: History taking and treatment planning
- Phase 2: Preparation
- Phase 3: Assessment
- Phase 4: Desensitization
- Phase 5: Installation
- Phase 6: Body scan
- Phase 7: Closure
- Phase 8: Re-evaluation

In addition to the standard protocol, there are protocols created for specific disorders (e.g., depression, phobia, addiction) or particular populations (e.g., children, psychotic symptoms, migrants).

EMDR and COVID-19

As already mentioned, the COVID-19 pandemic has many effects on the mental health of the general population and of HCP (e.g., anxiety, depression, PTSD). EMDR therapy seems to be a first choice treatment for those disorders. In the scientific literature, 12 papers appear, when performing a search with the keywords “EMDR” and “COVID-19.” Lenferink et al. (2020) consider that literature is not sufficiently documented concerning the practice of online EMDR therapy, despite some promising initial results, and conclude that with the COVID-19 pandemic, online cognitive behavioral therapy is preferred. Perri et al. (2021) found similar results between trauma-focused cognitive behavioral therapy and EMDR R-TEP on 38 patients with acute stress disorder DSM-5; APA, 2013. After seven sessions, participants in both groups had decreased anxiety symptoms by 30% and their traumatic and depressive symptoms decreased by 55%. The authors conclude that these two approaches would be first-choice treatments to prevent possible traumatic memories during these periods of pandemic. A study conducted in England and Ireland on 93 children and adult patients showed a significant reduction on four mental health scales (IES-R, GAD-7, PHQ-9, PCL-5) following online EMDR therapy (McGowan et al., 2021). In Mexico, Becker et al. (2021) found similarly encouraging results in a sample of 63 adult participants using the specific Acute Stress Syndrome Stabilization Remote for Groups (ASSYST-RG) protocol. During the confinement period, participants showed a reduction in post-traumatic stress, anxiety and depression. These effects were maintained at 3 months. Farrell et al. (2021) showed that online EMDR therapy was effective in only one session conducted online via videoconferencing and with a so-called blind protocol, without verbal feedback from the patients. These effects lasted 1 month and 6 months after the session. Tarquinio

et al. (2021) found similar results in a study of 17 nurses. After a single EMDR session in a videoconferencing format, there was a significant decrease in their levels of anxiety, depression, subjective distress and fear of returning to their workplace, as well as their safety in relation to COVID-19. Manfield et al. (2021) found encouraging results after using the Flash technique. In a study conducted in Italy with HCP seeking help during the first and second wave of the pandemic (Fogliato et al., 2022), after the administration of the EMDR Integrative Group Treatment Protocol (IGTP), professionals described a decrease in their acute stress and seemed to have developed protective factors for the later phases of the pandemic. Indeed, the results were maintained over time despite subsequent exposure and any retraumatization. Similar results were found in Mexico (Perez et al., 2020) and Italy (Torricelli et al., 2020).

EMDR Early Intervention

In EMDR, specific protocols are available for treatment of recent traumatic events, Early EMDR Intervention (EEI), which are presented in this article because they seem adapted to treated HCP. EEI are early intervention protocols focused on recent trauma. The term Early Intervention is used to describe psychotherapeutic interventions that are conducted rapidly after a traumatic incident.

EEI can be applied up to 6 months after the potentially traumatic event, but the window of an intervention within 3 months remains the most recommended by the different guidelines. The hypothesis shared in the EMDR community is that traumatic memories are not yet consolidated before this time (Shapiro & Maxfield, 2019), so EEI would reduce associative connections to past trauma and improve adaptive associations, adaptation and resilience (Shapiro & Laub, 2014). Several studies have highlighted that EEI reduce symptoms characteristic of the traumatic event (Acarturk et al., 2016; Jarero & Artigas, 2018; Saltini et al., 2017) and could prevent the development of disorders resulting from trauma exposure (Gil-Jardiné et al., 2018). Due to the COVID-19 pandemic, HCP are repeatedly exposed to high levels of stress (e.g., infected patients, increased mortality, risk of contamination) and are therefore vulnerable to the development of traumatic symptoms, which is why EEI seem to be an intervention of choice for HCP exposed to COVID-19.

In order to prevent and reduce the long-term negative impacts of traumatic events, early psychological interventions are recommended (Roberts, Kitchiner,

Kenardy, Lewis, et al., 2019; Roberts, Kitchiner, Kenardy, Robertson, et al. 2019). For example, recent research suggests that frontline healthcare professionals should receive early psychological interventions within the first few months following a traumatic event (Brooks et al., 2019; Roberts, Kitchiner, Kenardy, Lewis, et al., 2019).

EMDR therapy is currently one of the most suitable early psychological interventions for frontline workers (Hooper et al., 2021). For instance, EMDR produces a significantly greater reduction in PTSD symptoms compared to supportive debriefing (Jarero et al., 2013; Tarquinio et al., 2019). EEI can also be adapted to meet the needs of HCP.

The principal idea is to focus on EEI with HCP using rapid and short EMDR interventions to avoid traumatic accumulation of ongoing exposure to the pandemic and COVID patients.

Early Interventions tend to have three main purposes (Shapiro & Maxfield, 2019):

- To treat PTSD symptoms
- To prevent the exacerbation of these symptoms
- To prevent the development of PTSD (and other disorders)

The ICD-11 defines an acute stress reaction as

a reaction [which] refers to the development of transient emotional, somatic, cognitive, or behavioral symptoms as a result of exposure to an event or situation (either short- or long-lasting) of an extremely threatening or horrific nature (e.g., natural or human-made disasters, combat, serious accidents, sexual violence, assault). Symptoms may include autonomic signs of anxiety (e.g., tachycardia, sweating, flushing), being in a daze, confusion, sadness, anxiety, anger, despair, overactivity, inactivity, social withdrawal, or stupor. The response to the stressor is considered to be normal given the severity of the stressor, and usually begins to subside within a few days after the event or following removal from the threatening situation. (World Health Organization, 2019)

According to Bryant et al. (2011), during and shortly after a stressful event (immediate phase), an acute stress reaction may occur. The symptoms may include hyperarousal, intense distress, peritraumatic dissociation, and loss of a sense of safety. These symptoms are expected to disappear naturally once the perceived threat has passed. For some individuals, these symptoms will remain or even deteriorate after the event is over, sometimes beyond the 48 hours following the

incident (post-immediate phase). The symptoms may then cluster to the point that an acute stress disorder can be diagnosed (Bryant et al., 2011; Roberts et al., 2012).

From an Adaptive Information Processing (AIP) perspective, this mechanism seems to be the result, among other things, of the survivors' difficulty in processing and integrating the experience and in recognising that it is over (Shapiro, 1995, 2001, 2018).

Immediate or post-immediate EMDR interventions are hypothesised to facilitate the adaptive resolution and integration of the memory of the potentially traumatic event, allowing individuals to regain an emotional stability and to realise that the experience is over and that they are now safe (Shapiro, 1995, 2001, 2018). Indeed, distress largely diminishes after EEI, sometimes even disappearing totally (Roberts et al., 2019).

In addition to the relief that EEI provides, these protocols also have a preventive function. While it is fundamental to ensure that each survivor of a potentially traumatic event can quickly feel safe, the other essential aim of early intervention is to prevent the onset and development of PTSD or other trauma-related disorders (Shapiro & Maxfield, 2019).

Although many of those exposed to trauma will recover naturally, it is estimated that one third of survivors with PTSD will remain symptomatic for 3 years or more (National Institute for Health and Clinical Excellence [NICE], 2005). Studies suggest that disorders such as PTSD, generalized anxiety disorder, or major depressive disorder are likely to become chronic over time (Bryant, 2011). In addition, it has been shown that individuals with post-traumatic stress symptoms during the post-immediate phase were prone to develop PTSD later on. For example, a study by Harvey and Bryant (1999) found that 80% of those who met the criteria for acute stress disorder developed PTSD 6 months after the event and were still experiencing it 2 years later.

These factors confirm the importance of early interventions following a potentially traumatic event. Early interventions not only provide a solution to relieve individuals' distress, but more importantly, they may prevent long-term psychological consequences.

From the AIP perspective, early interventions prevent the fuelling of maladaptive memory networks and thus the accumulation of traumatic memories contributing to subsequent disorders. Additionally, EMDR may promote resilience by facilitating access to the adaptive memory networks after a traumatic event (Shapiro, 2009, 2012).

Several EMDR-based protocols have been developed for early intervention. Some are mainly intended

for use in the immediate phase, while others are indicated in the post-immediate phase.

Immediate Phase

Critical situations usually generate intense distress, helplessness, and a sense of urgency and lack of safety in the individuals. As previously discussed, the primary objective is safety in the present moment. During the minutes and hours following a traumatic event, in addition to provide psychological first aid, the *Emergency Response Procedure/Immediate Stabilization Procedure* proposed by Gary Quinn (2009, 2018a, 2018b) allows the victim to realise and integrate, even within their body, that the stressful event is over, that the threat has passed and that they are now safe. Bilateral stimulation administered at the same time as the enunciation of positive cognitions such as “It’s over, you are safe now” facilitate the processing of the event and the return to emotional stability. Similarly, the *EMDR Emergency Room and Ward Protocol* created by Guedalia and Yoeli (2009) can be considered for patients with restricted mobility.

Post-Immediate Phase

For the post-immediate phase, various existing protocols follow the standard eight phases of EMDR therapy while accelerating, when appropriate, some of the steps. “Brief and focused history taking includes all three prongs of standard EMDR therapy and includes information relevant to both psychological triage and establishment of a treatment plan” (Shapiro, 2018, p. 316). The preparation phase ensures that the patient is capable of self-regulation and can access their adaptive memory network.

A common feature of the various EEI used in the post-immediate phase is to establish a course of action focused on the recent traumatic experience itself, rather than on previous life events. The aim of EEI is in fact to reprocess the recent major event before it becomes consolidated maladaptively or chronic in order to restore the regular psychological functioning of the patient. Unlike the reprocessing of old memories, the reprocessing of a recent memory does not allow for the effect of generalization to other major life events:

it appeared that, at a certain level of information processing, the memory had not had sufficient time to consolidate into an integrated whole [...] Clearly, the memory of a recent traumatic event is consolidated at some level, since the client can give a serial description of the experience, but

at a crucial layer of information association, the different aspects of the memory are not integrally linked. (Shapiro, 2018, p. 222)

This implies that the recent memory is still disconnected from the rest—it is not fully consolidated and integrated into the client’s life history. The EMDR early interventions operate prior to the event integration. This requires adjustments to the standard procedure to facilitate an effective reprocessing. When an event is recent, a single image can’t represent the entire experience as is the case when using the EMDR standard protocol (Shapiro, 1995, 2001, 2018). Instead, EEI, some of which are presented below, will target the various parts of the event.

- **Recent Event Protocol (Shapiro, 1995)**
The first protocol, called the *Recent Event Protocol*, was proposed by Francine Shapiro in 1995. Applied from 48 hours after the traumatic event to 3 months afterwards, this protocol collects all the disturbing parts of the memory of the *event* then targets them chronologically, or starting with the worst part, using the standard EMDR procedure, and installs a positive cognition for each part. The patient will be asked to visualise the entire sequence of the event several times until there is nothing left to process. As the body retains residual information of the experience, the standard body scan is performed once the whole event is reprocessed.
- **Recent Traumatic Episode Protocol (Shapiro & Laub, 2008, 2014)**
A commonly used protocol in the aftermath of a traumatic event for negative life-changing events with ongoing consequences is the one developed by Elan Shapiro and Brurit Laub (2008, 2014): the *Recent Traumatic Episode Protocol* (R-TEP). This protocol includes elements from Francine Shapiro’s Recent Events Protocol and the EMD procedure with some additional distinctive features for containment and safety, such as an extended stabilization and focused processing. The preparation phase of R-TEP includes the four elements exercise (Shapiro, 2007), which consists of four stress management/affect regulation exercises, including the establishment of a safe/calm place. An essential point of R-TEP is that it considers the traumatic *episode* to be a temporal continuum from the beginning of the traumatic event itself to the present moment of the reprocessing session, including thoughts about the future. The episode comprises a series of fragments or parts, named Points of

Disturbance (PoD), which will be targets for reprocessing. After the narration of the trauma episode accompanied with BLS, the PoDs are identified and processed one at a time. PoDs are determined utilizing an introspective scan of the episode in the manner of a metaphorical non-sequential *Google search*. Then, the processing takes place for each PoD in a so-called focused processing, form: this consists of utilizing an EMD-type strategy when the PoD is an intrusion (circumscribed processing, only going with associations directly linked to the PoD) or an EMDr strategy (more extensive processing but going only with associations directly linked to the recent traumatic episode). For each PoD, a PC will be installed. Once all the PoDs have been processed and a Google search reveals no more PoDs, the processing ends when checking the SUD for the whole episode, followed by phase 5 installation of the traumatic episode positive cognition, and phases 6 body scan, 7 closure, and 8 re-evaluation.

The R-TEP focuses on the entire episode from the beginning of the event to the present. Evidence for the effectiveness of the R-TEP protocol as an early intervention can be found in three randomised controlled studies (Gil-Jardiné et al., 2018; Shapiro & Laub, 2015; Shapiro et al., 2018).

- EMDR Protocol for Recent Critical Incidents (Jarero et al., 2011, 2020)

In case of Ongoing Traumatic Stress caused by situations including natural or human provoked disasters (e.g., war, cancer, pandemic, natural disaster), where the trauma is spread out over time from 2 days to 6 months (or longer if the event continues), the *EMDR Protocol for Recent Critical (EMDR PRECI)*, developed by Jarero et al. (2011, 2020), can be suitable. Sustained events with a prolonged lack of safety are understood as a “continuum of stressful events with similar emotions, somatic, sensory and cognitive information (which) does not give the state dependent traumatic memory sufficient time to consolidate into an integrated whole” (Jarero et al., 2015, p. 167). Once the different parts of the event have been identified through a narrative form and once a preparation phase with breathing exercises and the learning of the Butterfly Hug technique has been completed, the first target will be the worst part of the event. In phase 3, neither a Positive Cognition (PC) nor the Validity of Cognition (VOC) will be requested and in phase four the process will follow the standard EMDR

Protocol’s reprocessing by using the Butterfly Hug technique, which seems to result in fewer negative associations. Similarly to the Recent Event Protocol, the entire sequence of the event is requested to ensure that there is nothing left to reprocess. Both Installation and Body Scan (phases 5 and 6) are performed once the whole event has been reprocessed rather than for each part of the event. Once the past has been reprocessed, the present stimuli and the future template can be reprocessed.

- Integrative Group Treatment Protocol (Jarero et al., 2006).

EMDR Integrative Group Treatment Protocol (EMDR IGTP) was developed by members of the Mexican Association for Mental Health Support in Crisis (Amamecrisis) after a hurricane on the western coast of Mexico in 1997 (Artigas et al., 2000; Jarero et al., 2006). This group protocol is also named “four-field-technique” or “butterfly protocol” and can be used with adaptations in contexts of war, violence, or natural disasters (Artigas et al., 2000; Jarero et al., 2013). Several studies have shown effectiveness with children and adults (Hurn & Barron, 2018; Jarero & Artigas, 2009; Jarero et al., 2006; Zaghrou-Hodali et al., 2008).

- URG-EMDR (Tarquinio et al., 2012)

The URG-EMDR protocol was developed by Tarquinio et al. (2012). This protocol is the result of the integration of several EEI protocols such as Shapiro’s R-TEP (2009) and Kutz et al.’s Modified Abridged EMDR Protocol (2008), and also inspired by the practice of psychological debriefing. The URG-EMDR was developed for the early care (i.e., between 24 and 72 hours) of rape victims.

A study conducted on a sample of healthcare professionals who treated COVID-19 patients indicates that the use of the online EMDR protocol URG-EMDR provided participants with improved emotional stability and reduced distress symptoms in a single session (Tarquinio et al., 2021). These results remained one week after the intervention, despite the ongoing professional activity and the continuity of the event. Not only did this intervention succeed in producing a significant decrease in anxiety and depressive symptoms, but these results were achieved on average in only 2 hours and 14 minutes. This is consistent with Jarero and Artigas (2018) assertion that, compared to older traumatic events, in recent or ongoing critical incidents EMDR acts faster, as memories are not yet consolidated.

Thus, EEI could be integrated as efficient emergency protocols. In summary, EMDR therapy, recognised in the treatment of the psychological consequences of traumatic events, has proven to be effective and suitable in the treatment of healthcare professionals (Hooper et al., 2021).

EEI focus only on the recent major event in order to prevent the onset of a possible mental disorder caused by the experience. One study has assessed the effectiveness of EEI following the COVID-19 pandemic (Perri et al., 2021). More specifically, the study aimed to evaluate the effectiveness of two brief psychological interventions for people exposed to traumatic experiences associated with the first Italian wave of the COVID-19 pandemic. The main results revealed that R-TEP was effective and produced a significant reduction in symptoms of anxiety, PTSD and depression. After seven sessions, anxiety was reduced by 30% while traumatic and depressive symptoms were reduced by 55%. These results were confirmed at one month follow-up where traumatic symptoms were reduced by a further 11% (Perri et al., 2021).

The SOFTER study which used an adaptation of the R-TEP protocol (Gil-Jardiné et al., 2018) also demonstrated the possibility of easily implementing a single session in hospital emergency departments, which could be easily replicated for HCP during the COVID-19 pandemic given the time constraints of the workers (Table 1).

Discussion

There has been a wide array of studies on the impact of the pandemic on healthcare professionals. As we have argued, with the COVID-19 pandemic, HCP may develop pathologies such as PTSD, anxiety disorders, depression, insomnia, and psychosomatic disorders (Ballesio et al., 2020; Ho et al., 2020; Kisely et al., 2020; Luo et al., 2020). That's why NICE recommends "active surveillance" of healthcare professionals to ensure that those affected by the working conditions are identified and assisted to access appropriate care (Greenberg et al., 2020).

According to the literature, EEI have shown effectiveness for this type of exposure, especially with HCP

TABLE 1. EMDR Early Interventions Protocols

Protocol name	Authors & date	Phase	Indication	Reference
Emergency Response Procedure (ERP)/ Immediate stabilization procedure (ISP)	Quinn (2009)	Immediate/ acute phase	Use in first hours following the event	Quinn, G. (2009). The emergency response protocol (ERP) In M. Luber (Ed.), <i>Eye movement desensitization and reprocessing (EMDR) scripted protocols: Basics and special situations</i> (pp. 271–276). Springer Publishing
	Quinn et al. (2018a, 2018b)		With silent or logorrheic patients	Quinn, G., Zucker, D., Thomas, R., Reiman, J. W., & Pynch, T. W. (2018a). <i>Immediate stabilization procedure</i> . Field manual Quinn, G., Zucker, D., Thomas, R., Reiman, J. W., & Pynch, T. W. (2018b). <i>Emergency response procedure</i> . Field manual
EMDR emergency Room and Ward protocol (EMDR-ER)	Guedalia and Yoeli (2009)	Immediate phase	Patient unable to move, stunned, impaired motor function, stupor, vagal malaise	Guedalia, J. S. B., & Yoeli, F. R. (2009). EMDR emergency room and wards protocol (EMDR-ER), In M. Luber (Ed.), <i>Eye movement desensitization and reprocessing (EMDR) scripted protocols: Basic and special situations</i> (pp. 241–250). Wiley
Recent Event Protocol (REP)	Shapiro (1995, 2001)	Post-immediate phase	Use from 2 days until 3 months after the event	Shapiro, F. (1995). <i>Eye movement desensitization and reprocessing: Basic principles, protocols and procedures</i> (1st ed.). Guilford

(continued)

TABLE 1. EMDR Early Interventions Protocols (continued)

Protocol name	Authors & date	Phase	Indication	Reference
Recent Traumatic Episode Protocol (RTEP)	Shapiro and Laub (2008, 2014)	Post-immediate phase	Use from 2 days until 6 months after the event Patients who may continue to have traumatic experiences after the incident	Shapiro, E., & Laub, B. (2008). EMDR early intervention (EEI): A summary, a theoretical model, and the recent traumatic episode protocol (R-TEP). <i>Journal of EMDR Practice and Research</i> , 2(2), 79–96 Shapiro, E., & Laub, B. (2014). The EMDR recent traumatic episode protocol (EMDR R-TEP) for early EMDR intervention (EEI): Overview & protocol instructions (revised September 2014)
EMDR Protocol for Recent Critical Incident	Jarero et al. (2011) Jarero and Artigas (2020)	Post-immediate phase	Use from 2 days until 6 months after the event (or longer if the event continues) In case of ongoing traumatic stress caused by natural or human-provoked disasters	Jarero, I., Artigas, L., & Luber, M. (2011). The EMDR protocol for recent critical incidents: Application in a disaster mental health continuum of care context. <i>Journal of EMDR Practice and Research</i> , 5(3), 82–84 Jarero, I., & Artigas, L. (2020). EMDR protocol for recent critical incidents and ongoing traumatic stress overview (revised April 2020)
EMDR Integrative Group Treatment Protocol	Jarero et al. (1997)	Post-immediate phase	Group treatment for children and adults impacted by critical incidents	Jarero, I., Artigas, L., & Hartung, J. (2006). EMDR integrative group treatment protocol: A post-disaster trauma intervention for children and adults. <i>Traumatology</i> , 12(2), 121–129
Urgence de prise en charge EMDR (URG-EMDR)	Tarquinio et al. (2012)	Immediate and Post-immediate phase	Use from 1 day until 3 days after the event	Tarquinio, C., Brennstuhl, M. J., Reichenbach, S., Rydberg, J. A., & Tarquinio, P. (2012). Prise en charge précoce de victimes de viols et présentation d'un protocole d'urgence de thérapie EMDR. <i>Sexologies</i> , 21, 147–156

(Tarquinio et al., 2021). Similarly, the objective of EEI is to prevent the memory from consolidating in maladaptive memory networks of the past, so it seems important to take immediate and appropriate measures after a traumatic event to avoid this. EMDR therapy and its early intervention protocols appear to be a particularly effective response for immediate and post-immediate measures in a primary intervention perspective, on the one hand by allowing a return to a sense of calm and security in the present moment and on the other hand by reducing the appearance of mental health disorders.

Regarding the limitations of this article, it was written as an epidemiological review and the PRISMA method was not used, so some references may be missing to support our argument. It would also be important to evaluate other types of psychotherapy that could be adapted to the care of HCP exposed to COVID-19 and its consequences and to compare them with EEI. Finally, given the risk factors associated with the onset of mental disorders (e.g., fear of infection, level of exposure), it seems important to consider all hospital staff, and not just healthcare

professionals, following the example of the IMPSY-COV study (2021), an ongoing survey of all hospital staff on the impact of the pandemic funded by the Nouvelle-Aquitaine Region and the Regional Health Agency in France.

The consequences of the pandemic among HCP have been demonstrated, it now remains to determine the best means to act to protect them, and EEI seem to be one of the ways to be favored.

References

- Acarturk, C., Konuk, E., Cetinkaya, M., Senay, I., Sijbrandij, M., Gulen, B., & Cuijpers, P. (2016). The efficacy of eye movement desensitization and reprocessing for post-traumatic stress disorder and depression among Syrian refugees: Results of a randomized controlled trial. *Psychological Medicine, 46*(12), 2583–2593. <https://doi.org/10.1017/S0033291716001070>
- American Psychological Association. (2004). *Association rules of the American psychological association*. Washington, DC: Author.
- Artigas, L., Jarero, I., Mauer, M., López Cano, T., & Alcalá, N. (2000). *EMDR and traumatic stress after natural disasters: Integrative treatment protocol and the butterfly hug*. Poster presented at the EMDRIA Conference, Toronto, Ontario, Canada.
- Ballesio, A., Lombardo, C., Lucidi, F., & Violani, C. (2020). Caring for the careers: Advice for dealing with sleep problems of hospital staff during the COVID-19 outbreak. *Journal of Sleep Research, 1*–9. <https://doi.org/10.1111/jsr.13096>
- Becker, Y., Estévez, M. E., Pérez M. C., Osorio, A., Jarero I., and Givaudan M. (2021). Longitudinal multisite randomized controlled trial on the provision of the Acute Stress Syndrome Stabilization Remote for Groups to General Population in Lockdown During the COVID-19 Pandemic. *Psychology and Behavioral Science, 16*(2), 0011–0011.
- Brooks, S. K., Rubin, G. J., & Greenberg, N. (2019). Traumatic stress within disaster-exposed occupations: Overview of the literature and suggestions for the management of traumatic stress in the workplace. *British Medical Bulletin, 129*(1), 25–34.
- Bryant, R. A. (2011). Acute stress disorder as a predictor of posttraumatic stress disorder: A systematic review. *Journal of Clinical Psychiatry, 72*(2), 233–239.
- Bryant, R. A., Friedman, M. J., Spiegel, D., Ursano, R., & Strain, J. (2011). A review of acute stress disorder in DSM 5. *The Journal of Lifelong Learning in Psychiatry, 9*(3).
- Chan, A. O., & Huak, C. Y. (2004). Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. *Occupational Medicine, 54*(3), 190–196.
- Cheung, W.-S., & Ho, S. M. Y. (2004). The use of death metaphors to understand personal meaning of death among Hong Kong Chinese undergraduates. *Death Studies, 28*, 47–62.
- Ehrlich, H., McKenney, M., & Elkbuli, A. (2020). Protecting our healthcare workers during the COVID-19 pandemic. *American Journal of Emergency Medicine, 38*, 1515–1539.
- El-Hage, W., Hingray, C., Lemogne, C., Yroni, A., Brunault, P., Biennu, T., Etain, B., Paquet, C., Gohier, B., Bennabi, D., Birmes, P., Sauvaget, A., Fakra, E., Prieto, N., Bulteau, S., Vidailhet, P., Jollant, F., Camus, V., Loboer, M., Krebs, M.-O., et al. (2020). Health professionals facing the coronavirus disease 2019 (COVID-19) pandemic: What are the mental health risks? *Encephale, 46*(3). <https://doi.org/10.1016/j.encep.2020.04.008>
- Farrell, D., Fadeeva, A., Zat, Z., Knibbs, L., Miller, P., Barron, I., Matthes, H., Matthes, C., Gazit, N., & Kiernan, M. D. (2021). A stage 1 pilot cohort exploring the use of EMDR therapy as a video-conference psychotherapy during covid-19—A proof of concept study utilising a virtual blind 2 therapist protocol. <https://doi.org/10.21203/rs.3.rs-886940/v1>
- Fogliato, E., Invernizzi, R., Maslovaric, G., Fernandez, I., Rigamonti, V., Lora, A., Frisone, E., & Pagani, M. (2022). Promoting mental health in healthcare workers in hospitals through psychological group support with eye movement desensitization and reprocessing during COVID-19 pandemic: An observational study. *Frontiers in Psychology, 12*. <https://doi.org/10.3389/fpsyg.2021.794178>
- Gil-Jardiné, C., Evrard, G., Al Joboory, S., Tortes Saint Jammes, J., Masson, F., Ribéreau-Gayon, R., Galinski, M., Salmi, L. M., Revel, P., Régis, C. A., Valdenaire, G., & Lagarde, E. (2018). Emergency room intervention to prevent post concussion-like symptoms and post-traumatic stress disorder. A pilot randomized controlled study of a brief eye movement desensitization and reprocessing intervention versus reassurance or usual care. *Journal of Psychiatric Research, 103*, 229–236. <https://doi.org/10.1016/j.jpsychires.2018.05.024>
- Greenberg, N., Docherty, M., Gnanapragasam, S., & Wessely, S. (2020). Managing mental health challenges faced by healthcare providers during COVID-19 pandemic. *British Medical Journal, 368*, m1211. <https://doi.org/10.1136/bmj.m1211>
- Guedalia, J. S. B., & Yoeli, F. R. (2009). EMDR emergency room and wards protocol (EMDR-ER). In M. Luber (Ed.), *Eye movement desensitization and reprocessing (EMDR) scripted protocols: Basic and special situations* (pp. 241–250). Wiley.
- Harvey, A. G., & Bryant, R. A. (1999). The relationship between acute stress disorder and posttraumatic stress disorder: A 2-year prospective evaluation. *Journal of Consulting and Clinical Psychology, 67*(6), 985–988. <https://doi.org/10.1037/0022-006X.67.6.985>
- Ho, S. M. Y., Chow, A. Y. M., Chan, C.L.-W., & Tsui, Y. K. Y. (2002). The assessment of grief among Hong Kong Chinese: A preliminary report. *Death Studies, 26*, 91–98.

- Ho, S. M. Y., Ho, J. W. C., Chan, C. L. W., Kwan, K., & Tsui, Y. K. Y. (2003). Decisional consideration of hereditary colon cancer genetic test results among Hong Kong Chinese adults. *Cancer Epidemiology, Biomarkers, & Prevention*, *12*, 426–432.
- Ho, S. M. Y., Kwong-Lo, R. S. Y., Mak, C. W. Y., & Wong, J. S. (2005). Fear of severe acute respiratory syndrome (SARS) among health care workers. *Journal of Consulting and Clinical Psychology*, *73*(2), 344–349. <https://doi.org/10.1037/0022-006X.73.2.344>
- Ho, S. M. Y., Saltel, P., Machavoine, J.-L., Rapoport-Hubschman, N., & Spiegel, D. (2004). Cross-cultural aspects of cancer care. In R. J. Moore & D. Spiegel (Eds.), *Cancer, culture, and communication* (pp. 157–183). Kluwer Academic/Plenum Publishers.
- Hooper, J. J., Saulsman, L., Hall, T., & Waters, F. (2021). Addressing the psychological impact of COVID-19 on healthcare workers: Learning from a systematic review of early interventions for frontline responders. *BMJ*, *11*, e044134. <https://doi.org/10.1136/bmjopen-2020-044134>
- Hughes, P. (2015). Mental illness and health in Sierra Leone affected by Ebola: Lessons for health workers. *Intervention*, *13*(1), 45–84.
- Hurn, R., & Barron, I. (2018). The EMDR integrative group treatment protocol in a psychosocial program for refugee children: A qualitative pilot study. *Journal of EMDR Practice and Research*, *12*(4), 208–223. <https://doi.org/10.1891/1933-3196.13.4.270>
- Jarero, I., Amaya, C., & Givaudan, M. (2013). EMDR individual protocol for Paraprofessional use: A randomized controlled trial with first responders. *Journal of EMDR Practice and Research*, *7*, 55–64.
- Jarero, I., & Artigas, L. (2009). EMDR integrative group treatment protocol. *Journal of EMDR Practice & Research*, *3*(4), 287–288.
- Jarero, I., & Artigas, L. (2018). AIP model-based acute trauma and ongoing traumatic stress theoretical conceptualization. *Iberoamerican Journal of Psychotrauma and Dissociation*, *10*, 1–9.
- Jarero, I., & Artigas, L. (2020). EMDR protocol for recent critical incidents and ongoing traumatic stress overview (revised April 2020). <https://www.researchgate.net/publication/340716249>
- Jarero, I., Artigas, L., & Hartung, J. (2006). EMDR integrative group treatment protocol: A post-disaster trauma intervention for children and adults. *Traumatology*, *12*(2), 121–129.
- Jarero, I., Artigas, L., & Luber, M. (2011). The EMDR protocol for recent critical incidents: Application in a disaster mental health continuum of care context. *Journal of EMDR Practice and Research*, *5*(3), 82–84.
- Jarero, I., Artigas, L., Mauer, M., Lopez Cano, T., & Alcalá, N. (1999). *Children's post traumatic stress after natural disasters: Integrative treatment protocol*. Poster presented at the annual meeting of ISTSS, Miami, FL.
- Jarero, I., Roque-Lopez, S., & Gomez, J. (2013). The provision of an EMDR-based multicomponent trauma treatment with child victims of severe interpersonal trauma. *Journal of EMDR Practice and Research*, *7*(1), 17–28. Open access: <https://doi.org/10.1891/1933-3196.7.1.17>
- Jarero, I., Uribe, S., Artigas, L., & Givaudan, M. (2015). EMDR protocol for recent critical incidents: A randomized controlled trial in a technological disaster context. *Journal of EMDR Practice and Research*, *9*, 4. <https://doi.org/10.1891/1933-3196.9.4.166>
- Kang, L., Ma, S., Chen, M., Yang, J., Wang, Y., Li, R., & Liu, Z. (2020). Impact on mental health and perception 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*, *S0889-1591*(20), 30348-2. <https://doi.org/10.1016/j.bbi.2020.03.028>
- Kisely, S., Warren, N., McMahon, L., Dalais, C., Henry, I., & Siskind, D. (2020). Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: Rapid review and meta-analysis. *BMJ*, *5*, 369:m1642. <https://doi.org/10.1136/bmj.m1642>
- Lancee, W. J., Maunder, R. G., & Goldbloom, D. S. (2008). Prevalence of psychiatric disorders among Toronto hospital workers one to two years after the SARS outbreak. *Psychiatric Services*, *59*(1), 91–95.
- Lenferink, L. I. M., Meyerbröker, K., & Boelen, P. A. (2020). PTSD treatment in times of COVID-19: A systematic review of the effects of online EMDR. *Psychiatry Research*, *293*, 113438.
- Luceño-Moreno, L., Talavera-Velasco, B., García-Albuerne, Y., & Martín-García, J. (2020). Symptoms of posttraumatic stress, anxiety, depression, levels of resilience and burnout in Spanish health personnel during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, *17*(15), 5514. <https://doi.org/10.3390/ijerph17155514>
- Luo, M., Guo, L., Yu, M., & Wang, H. (2020, January). The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public—A systematic review and meta-analysis. *Psychiatry Research*, 113190. <https://doi.org/10.1016/j.psychres.2020.113190>
- Manfield, P. E., Engel, L., Greenwald, R., & Bullard, D. G. (2021). Flash technique in a scalable low-intensity group intervention for COVID-19-related stress in healthcare providers. *Journal of EMDR Practice and Research*, *15*(2), 127–139. <https://doi.org/10.1891/emdr-d-20-00053>
- Mattila, E., Peltokoski, J., Neva, M. H., Kaunonen, M., Helminen, M., & Parkkila, A. K. (2021). COVID-19: Anxiety among hospital staff and associated factors. *Annals of Medicine*, *53*(1), 237–246. <https://doi.org/10.1080/07853890.2020.1862905>
- Maunder, R., Hunter, J., & Vincent, L. (2003). The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *Canadian Medical Association Journal*, *10*, 1–7.
- McGowan, I. W., Fisher, N., Havens, J., & Proudlock, S. (2021). An evaluation of eye movement desensitization

- and reprocessing therapy delivered remotely during the Covid-19 pandemic. *BMC Psychiatry*, 21(1), 560. <https://doi.org/10.1186/s12888-021-03571-x>
- Moench, J., & Billsten, O. (2021). Randomized controlled trial: Self-care traumatic episode protocol, computerized EMDR treatment of COVID-19-related stress. *Journal of EMDR Practice and Research*, 15(2), 99–113. <https://doi.org/10.1891/emdr-d-20-00047>
- National Institute for Clinical Excellence. (2005). *Post traumatic stress disorder (PTSD): The management of adults and children in primary and secondary care*. NICE Guidelines.
- Pagani, M., Di Lorenzo, G., Verardo, A. R., Nicolais, G., Monaco, L., Lauretti, G., Russo, R., Niolu, C., Ammaniti, M., Fernandez, I., & Siracusano, A. (2012). Neurobiological correlates of EMDR monitoring—An EEG study. *PLoS ONE*, 9, e45753. <https://doi.org/10.1371/journal.pone.0045753>
- Perez, M. C., Estevez, M. E., Becker, Y., Osorio, A., Jarero, I., & Givaudan, M. (2020). Multisite randomized controlled trial on the provision of the EMDR integrative group treatment protocol for ongoing traumatic stress remote to healthcare professionals working in hospitals during the COVID-19 pandemic. *Psychology and Behavioral Science International Journal*, 15(4), 1–12. <https://doi.org/10.19080/PBSIJ.2019.10.555920>
- Perri, R. L., Castelli, P., La Rosa, C., Zucchi, T., & Onofri, A. (2021). COVID-19, isolation, quarantine: On the efficacy of internet-based eye movement desensitization and reprocessing (EMDR) and cognitive-behavioral therapy (CBT) for ongoing trauma. *Brain Sciences*, 11, 579. <https://doi.org/10.3390/brainsci11050579>
- Portero de la Cruz, S., Cebrino, J., Herruzo, J., & Vaquero-Abellán, M. (2020). A multicenter study into burnout, perceived stress, job satisfaction, coping strategies, and general health among emergency department nursing staff. *Journal of Clinical Medicine*, 9(4), E1007. <https://doi.org/10.3390/jcm9041007>
- Quinn, G. (2009). The emergency response protocol (ERP). In M. Luber (Ed.), *Eye movement desensitization and reprocessing (EMDR) scripted protocols: Basics and special situations* (pp. 271–276). Springer Publishing.
- Quinn, G., Zucker, D., Thomas, R., Reiman, J. W., & Pynch, T. W. (2018a). *Immediate stabilization procedure*. Field Manual.
- Quinn, G., Zucker, D., Thomas, R., Reiman, J. W., & Pynch, T. W. (2018b). *Emergency response procedure*. Field Manual.
- Ricci-Cabello, I., Echavez, J. F. M., Serrano-Ripoli, M. J., Fraile-Navaroo, D., DeRoque, M. A. F., Moreno, G. P., Castro, A., Ruiz-Perez, I., Campos, R. Z., & Goncalves-Bradley, D. (2020). Impact of viral epidemic outbreaks on mental health of healthcare workers: A rapid systematic review. *medRxiv*. <https://doi.org/10.1101/2020.04.02.20048892>
- Roberts, N. P., Kitchiner, N. J., Kenardy, J., & Bisson, J. I. (2012). Early psychological interventions to treat acute traumatic stress symptoms. *Cochrane Database of Systematic Reviews*, 2010(3). Art. No.: CD007944. <https://doi.org/10.1002/14651858.CD007944.pub2>
- Roberts, N. P., Kitchiner, N. J., Kenardy, J., Lewis, C. E., & Bisson, J. I. (2019). Early psychological intervention following recent trauma: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, 10(1), 1695486. <https://doi.org/10.1080/20008198.2019.1695486>
- Roberts, N. P., Kitchiner, N. J., Kenardy, J., Robertson, L., Lewis, C., & Bisson, J. I. (2019). Multiple session early psychological interventions for the prevention of post-traumatic stress disorder. *The Cochrane Database of Systematic Reviews*, 8(8), CD006869. <https://doi.org/10.1002/14651858.CD006869>
- Romero, C. S., Delgado, C., Català, J., Ferrer, C., Errando, C., Iftimi, A., Benito, A., de Andrés, J., & Otero, M. (2020). COVID-19 psychological impact in 3109 healthcare workers in Spain: The PSIMCOV group. *Psychological Medicine*, 1–7. <https://doi.org/10.1017/S0033291720001671>
- Roychoudhury, S., Das, A., Sengupta, P., Dutta, S., Roychoudhury, S., Choudhury, A. P., Fuzayel Ahmed, A. B., Bhattacharjee, S., & Slama, P. (2020). Viral pandemics of the last four decades: Pathophysiology, health impacts and perspectives. *International Journal of Environmental Research and Public Health*, 17, 941. <https://doi.org/10.3390/ijerph17249411>
- Saltini, A., Rebecchi, D., Callerame, C., Fernandez, I., Bergonzini, E., & Starace, F. (2017). Early eye movement desensitisation and reprocessing (EMDR) intervention in a disaster mental health care context. *Psychology, Health & Medicine*, 1–10. <https://doi.org/10.1080/13548506.2017.1344255>
- Shapiro, F. (1995). *Eye movement desensitization and reprocessing: Basic principles, protocols and procedures* (1st ed.). Guilford.
- Shapiro, F. (2001). *Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures* (2nd ed.). Guilford Press.
- Shapiro, E. (2007). What is an effective self-soothing technique that I can teach my client to use at home when stressed? *Journal of EMDR Practice and Research*, 1(2). <https://doi.org/10.1891/1933-3196.1.2.122>
- Shapiro, E. (2009). EMDR treatment of recent trauma. *Journal of EMDR Practice and Research*, 3(3), 141–151.
- Shapiro, E. (2012). EMDR and early psychological intervention following trauma. *Revue Européenne de Psychologie Appliquée*. <https://doi.org/10.1016/j.erap.2012.09.003>
- Shapiro, F. (2018). *Eye movement desensitization and reprocessing: Basic principles, protocols, and procedures* (3rd ed., pp. 222–223, 315–317). Guilford Press.
- Shapiro, E., & Laub, B. (2008). EMDR early intervention (EEI): A summary, a theoretical model, and the recent traumatic episode protocol (R-TEP). *Journal of EMDR Practice and Research*, 2(2), 79–96. <https://doi.org/10.1891/1933-3196.2.2.79>
- Shapiro, E., & Laub, B. (2014). The EMDR recent traumatic episode protocol (EMDR R-TEP) for early EMDR

- intervention (EEI): Overview & protocol instructions (revised September 2014). <http://emdrresearchfoundation.org/toolkit/rtep-manual.pdf>
- Shapiro, E., & Laub, B. (2015). EMDR early intervention following a community critical incident: A randomized clinical trial. *Journal of EMDR Practice and Research*, 9(1), 17–27. <https://doi.org/10.1891/1933-3196.9.1.17>
- Shapiro, E., & Maxfield, L. (2019). The efficacy of EMDR early interventions. *Journal of EMDR Practice and Research*, 13(4), 291.
- Shultz, J. M., Baingana, F., & Neria, Y. (2015). The 2014 Ebola outbreak and mental health: Current status and recommended response. *JAMA*, 313(6), 567–568. <https://doi.org/10.1001/jama.2014.17934>
- Tan, B. Y. Q., Chew, N. W. S., Lee, G. K. H., Jing, M., Goh, Y., Yeo, L. L. L., Zhang, K., Chin, H.-K., Ahmad, A., Khan, F. A., Shanmugam, G. N., Chan, B. P. L., Sunny, S., Chandra, B., Ong, J. J. Y., Paliwal, P. R., Wong, L. Y. H., Sagayanathan, R., Chen, J. T., & Sharma, V. K. (2020). Psychological impact of the COVID-19 pandemic on health care workers in Singapore. *Annals of Internal Medicine*, 173(4), 317–320. <https://doi.org/10.7326/M20-1083>
- Tarquinio, C., Brennstuhl, M. J., Dellucci, H., Iracane, M., Rydberg, J. A., Silvestre, M., Tarquinio, P., & Zimmermann, E. (2019). *Aide Mémoire EMDR en 46 fiches*. Ed Dunod.
- Tarquinio, C., Brennstuhl, M. J., Reichenbach, S., Rydberg, J. A., & Tarquinio, P. (2012). Prise en charge précoce de victimes de viols et présentation d'un protocole d'urgence de thérapie EMDR. *Sexologies*, 21, 147–156. <https://doi.org/10.1016/j.sexol.2011.11.013>
- Tarquinio, C., Brennstuhl, M. J., Rydberg, J. A., Bassan, F., Peter, L., Tarquinio, C. L., Auxéméry, Y., Rotonda, C., & Tarquinio, P. (2021). EMDR in telemental health counseling for healthcare workers caring for COVID-19 patients: A pilot study. *Issues in Mental Health Nursing*, 42(1), 3–14. <https://doi.org/10.1080/01612840.2020.1818014>
- Torricelli, L., Poletti, M., & Raballo, A. (2020). Managing COVID-19 related psychological distress in health workers: Field experience in northern Italy. *Psychiatry and Clinical Neurosciences*. <https://doi.org/10.1111/pcn.13165>
- Tortes Saint Jammes, J., Sorel, O., Lavandier, A., & Martin, C. H. (2021). Impact psychologique de la maladie Coronavirus 2019 (COVID-19) sur le personnel hospitalier de Nouvelle Aquitaine. In press.
- Vignaud, P., & Prieto, N. (2020). Impact psychique de la pandémie de Covid 19 sur les professionnels soignants. *Actualités pharmaceutiques* (599). <https://doi.org/10.1016/j.actpha.2020.08.013>
- Vizheh, M., Qorbani, M., Arzaghi, S. M., Muhidin, S., Javanmard, Z., & Esmaceli, M. (2020). The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *Journal of Diabetes & Metabolic Disorders*, 19, 1967–1978. <https://doi.org/10.1016/s40200-020-00643-9>
- World Health Organization. (2018). ICD-11: International Classification of Diseases 11th Revision. WHO (<https://icd.who.int/en/>).
- Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N. (2020). The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Medical Science Monitor*, 26, e923549. <https://doi.org/10.12659/MSM.923549>
- Xiaoming, X., Ming, A., Su, H., Wo, W., Jianmei, C., Qi, Z., Hua, H., Xuemei, L., Lixia, W., Jun, C., Lei, S., Zhen, L., Lian, D., Jing, L., Handan, Y., Haitang, Q., Xiaoting, H., Xiaorong, C., Ran, C., & Li, K. (2020). The psychological status of 8817 hospital workers during COVID-19 epidemic: A cross-sectional study in Chongqing. *Journal of Affective Disorders*, 276, 555–561. <https://doi.org/10.1016/j.jad.2020.07.092>
- Xu, J., Xu, Q.-H., & Wang, C.-M. (2020). Psychological status of surgical staff during the COVID-19 outbreak. *Psychiatry Research*, 288, 112955. <https://doi.org/10.1016/j.psychres.2020.112955>
- Yael, B., Elena, E. M., Cristina, P. M., Amalia, O., Ignacio, J., & Martha, G. (2021). Longitudinal multisite randomized controlled trial on the provision of the acute stress syndrome stabilization remote for groups to general population in lockdown during the COVID-19 pandemic. *Psychology and Behavioral Science International Journal*, 16(2). <https://doi.org/10.19080/PBSIJ.2021.16.555931>
- Yang, L., Yin, J., Duolao, W., Rahman, A., & Xiaomei, L. (2020). Urgent need to develop evidence-based self-help interventions for healthcare workers in COVID-19 pandemic. *Psychological Medicine*, 28, 1–2. <https://doi.org/10.1017/S0033291720001385>
- Zaghrou-Hodali, M., Alissa, F., & Dodgson, P. W. (2008). Building resilience and dismantling fear: EMDR group protocol with children in an area of ongoing trauma. *Journal of EMDR Practice and Research*, 2(2), 106–113. <https://doi.org/10.1891/1933-3196.2.2.106>
- Zhu, Z., Xu, S., Wang, H., Liu, Z., Wu, J., Li, G., Miao, J., Zhang, C., Yang, Y., Sun, W., & Zhu, S. (2020). COVID-19 in Wuhan: Immediate psychological impact on 5062 health workers. *medRxiv*. <https://doi.org/10.1101/2020.02.20.20025338>

Disclosure. The authors have no relevant financial interest or affiliations with any commercial interests related to the subjects discussed within this article.

Funding. The author(s) received no specific grant or financial support for the research, authorship, and/or publication of this article.

Correspondence regarding this article should be directed to Juliane Tortes St Jammes. E-mail: jtjs.emdr@hotmail.com