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COVID-19

Treating COVID-19 patients with EMDR: A pilot study



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ABSTRACT

The threatening and unpredictable nature of the coronavirus disease (COVID-19) pandemic presents unprecedented mental-health challenges worldwide. For those directly affected by the disease, the stress of facing potential death and overcoming fear can overwhelm their personal coping resources and can lead to symptoms of posttraumatic stress disorder and anxiety and depression. The objective of our study was to investigate the effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) therapy to reduce anxiety-depressive symptoms, distress and fear of the unknown in COVID-19 patients hospitalized for intensive care. A pilot study was conducted with 21 participants hospitalized for COVID-19 (11 women and 10 men) who were treated with EMDR therapy and assessed for anxiety-depressive symptoms (Hospital Anxiety and Depression Scale, HADS), intensity of distress (Subjective Units of Disturbance, SUD scale), and levels of experienced fear (i.e., fear of the unknown) (Multidimensional Assessment of COVID-19-Related Fears, MAC-RF). After the 4-session treatment, the EMDR therapy showed to be effective in reducing all of the evaluated symptoms in all patients and allowed for stabilization. All patients maintained improved psychological states for one week following the four sessions. EMDR therapy has been shown to be an effective strategy for helping patients process exposure to adverse events by relieving symptoms of acute stress and trauma. EMDR is a focused approach that with as few as 4 sessions can strengthen adaptive coping strategies for dealing with an ongoing situation, restore optimism and can rapidly prevent the onset of potentially long-lasting psychological disorders.

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Introduction

As the world faces the current coronavirus (COVID-19) pandemic, scientists and researchers across nearly every discipline are working together at the international level to better understand the complex impacts of the COVID-19 virus on physical and psychological health. A recent study by Brooks et al. (2020) showed that extended quarantine protocols may have long-term consequences among the general population, echoing findings previously published by Newman (2012). Other authors have reported the range of effects associated with quarantine protocols and other forms of confinement include depressed mood, hyper-responsiveness to stress, irritability, fear, anger, insomnia and even symptoms of posttraumatic stress disorder (PTSD) (Reynolds

et al., 2016; Sprang et al., 2013; Yoon et al., 2016). A limited number of studies focused on the psychological impacts on those infected with the COVID-19 virus (Roger et al., 2020; Wang et al., 2020; Xiao, 2020; Xiao et al., 2020). Based on limited available data (Wang et al., 2020) and clinicians' observations, it appears that this disease profoundly disrupts the psycho-emotional balance of patients, and that the mechanisms underlying this imbalance are directly related to the severity of the disease symptoms (fever, pain, aches, diarrhea, accelerated heart rate, and extreme fatigue and muscle pain). Hospitalization for those diagnosed with confirmed COVID-19 means facing a long list of emotionally charged stressors in a short period of time (4 to 5 weeks). For COVID-19 patients, these factors have been shown to cause heightened distress, anxiety, depression, and posttraumatic stress disorders (Rogers et al., 2020).

It is important, however, to stay mindful that data supporting the presence of PTSD or acute stress disorder in patients with COVID-19

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can be misleading, given that the phenomenology of traumatization is invariably more complex; the question essentially centers on what constitutes trauma in this specific context. The uniqueness is the interplay between multiple potential stressors, which are not of limited duration as is most often the case in classic cases of PTSD, where the traumatic shock more often than not remains confined to the victim's past experience (regardless of the fact that victims may experience the trauma subjectively in the present). Due to the specificity of the disease, these patients can quickly become entangled in a complex psycho-emotional web that no avoidance strategy could possibly remedy. In this respect, we can in part refer to similar situations of chronic insecurity that are well documented in the field of psychology, such as war trauma survivors, and the plight of refugees, migrants, and children in foster care (Fischer, 1994; Tarquinio & Auxéméry, 2022). From a clinical perspective we know that the psychotraumatic spectrum in such situations is often much broader than PTSD alone. For everything we do not know about the COVID-19 virus, the disruptions and turmoil endured by these patients crystallize around a central and constant element: the virus is directly life-threatening.

One core dimension that is known to characterize extreme life situations is experiencing fear of the unknown. Fear of the unknown, as defined by Carleton (2016), is the "propensity of an individual to experience fear caused by the lack or absence of information". Relatedly, Carleton describes intolerance of uncertainty as "an individual's dispositional incapacity to endure the aversive response triggered by the perceived absence of salient, key, or sufficient information, and sustained by the associated perception of uncertainty" (Carleton, 2016). Works that have investigated encoding of uncertainty at the brain level suggest that "encounters with the unknown" may induce sustained neuronal activity linked to some psychiatric illnesses such as generalized anxiety and depression (Bach & Dolan, 2012; Jackson et al., 2015). Along these same lines, Schimmenti et al. (2020) proposed a complimentary path for a broader perspective of the psychopathological spectrum to better understand psychological markers of the COVID-19 virus with the development and validation in French of their Multidimensional Assessment of COVID-19-Related Fears (MAC-RF).

In this respect, EMDR therapy (Shapiro, 1989) shows every sign of being a promising psychotherapeutic approach to treating patients whose mental health is affected by the experience of contracting the COVID-19 virus. Since its inception in 1989, numerous published studies have reported the effectiveness of the EMDR method, particularly as a psychotherapy for PTSD. Multiple randomized controlled trials and a number of meta-analyses confirmed significant efficacy of EMDR therapy for treating PTSD (Bisson et al., 2007; Bradley et al., 2005; Chen et al., 2014; Lee & Cuijpers, 2013; Maxfield & Hyer, 2002; Sidler & Wagner, 2006; Van Etten & Taylor, 1998), anxiety (Scelles & Bulnes, 2021; Shapiro, 1999; Valiente-Gomèz et al., 2017) and depression (Dominguez et al., 2021; Valiente-Gomèz et al., 2017).

The objective of the present study is to show how EMDR therapy (Tarquinio et al, 2013; 2016) constitutes an effective and relevant therapeutic approach for treating adverse psychological outcomes experienced by patients admitted to intensive care units with severe cases of the COVID-19 virus. Variations of standard EMDR therapy protocols are also explored in this study.

Method

To respond to our research objectives, an evaluation of the effects of EMDR therapy was conducted by two independent EMDR therapists in a routine clinical setting where, from July 1, 2020 to August 30, 2020, they treated COVID-19 patients who had requested EMDR therapy following hospitalization and admission to intensive care units.

A total of 21 patients took part in this research. Participants selected for inclusion had either independently contacted the offices of the psychologists involved in the study (n=12) or were referred by their general practitioner (n=9).

To be included in the study, participants were required to meet the following criteria:

- Reasons for seeking consultation are related to the COVID-19 virus.
- Have been hospitalized to receive intensive care for the COVID-19 virus.
- Are presenting clinical signs of anxiety or depression, which the patient attributes to COVID-19 diagnosis.
- Have received no therapeutic care prior to contracting COVID-19.
- Were not prescribed with antidepressant or anxiolytic treatment prior to contracting COVID-19.
- Accept the framework and procedure of the research protocol and give voluntary informed consent to participate in the study.
- Reside in France and do not need an interpreter to speak and understand the French language.
- Are between 18 and 60 years of age.
- Do not suffer from mental disorders.
- Do not use drugs or alcohol.

Material and procedure

Before proposing EMDR therapy to participating patients, the therapists conducted preliminary interviews with each patient and reviewed their recent medical history. These sessions allowed the therapists to ascertain if patients met the necessary inclusion criteria, but also allowed the patients to begin establishing a trusting relationship with their therapist in a structured and supervised setting. The study was presented as a routine care assessment for treating COVID-19 patients who were hospitalized and admitted to intensive care units. The EMDR protocol was then explained detail to patients, after which they were given the opportunity to give their consent to be included in the research protocol and sign a voluntary informed consent form to that effect. Before beginning the therapy (pre-test phase), participants were asked to complete several questionnaires pertaining to different scales relevant to the study objectives. This same assessment phase was then repeated after completing the therapy, or after four 60-minute sessions (post-test phase), and again one week later. All questionnaires were presented in printed form and were filled out on site in the therapists' offices. Participants were informed of the study conditions and gave informed consent. The study evaluation period stopped after four EMDR sessions and following the reassessment one week later. However, eighteen of the 21 patients included in the study expressed a wish to continue their treatment to address other problems not related to their experience contracting the COVID-19 virus or as COVID-19 intensive care inpatients.

During the pre-test phase, patients were provided with a printed data sheet related to scales for measuring levels of anxiety and/or depression, fear of the unknown and overall distress.

- Anxiety and depression were assessed with the Hospital Anxiety and Depression Scale (HADS) to evaluate the current levels of depressive and anxiety symptoms by eliminating somatic symptoms which, according to the authors of the scale (Razavi et al., 1989; Schimmenti et al., 2020) are likely to distort evaluations in patients treated by internal medicine and who frequently present organic problems. The final version of this scale comprises 14 items, and 2 subscales with 7 items related to anxiety and 7

items to depression. The seven items pertaining to anxiety provide a general overall score.

- The Multidimensional Assessment of COVID-19-Related Fears (MAC-RF) (Schimetti et al., 2020b; Schimetti et al., 2020a) is an eight-item scale corresponding to fears related to COVID-19 and rated on a five-point Likert scale (0 to 4). MAC-RF scores can range from 0 to 32, where higher scores correspond to higher fear levels related to COVID-19.
- The Subjective Units of Disturbance (SUD) scale (Wolpe, 1990; Wolpe & Abrams, 1991) is a measure on a Likert scale rated from 0 to 10, and provides an indication of the degree of distress caused by the mental or target image activated and treated during the psychotherapeutic process. It is a very subjective evaluation of the patient's negative feelings during treatment and is an integral part of the EMDR protocol.

The hypothesis we expected this measure to test was whether treatment with EMDR therapy would lead to lower scores for anxiety and depression between the pre-test phase and the post-test phase after one week.

We anticipated that the different measures of the SUD assessment would show a significant decrease in patient distress between the pre-test and post-test phases, and similarly, we expected patients to maintain lower scores after one week.

We also predicted that the EMDR therapy would lead to a reduction in the patients' experience of fear of the unknown that their experiences with being infected with the virus would have previously activated. Along these same lines, we anticipated that post therapy, patients would experience a greater sense of security. We hypothesized that the protocol as a whole would therefore have an immediate effect, as well as short, medium- and long-term effects on the ability of patients to cope with and adapt to complex situations in the best possible way.

Results

Due to lack of normality in the distribution of variables and the small sample size (n<30) the data were processed using non-parametric statistics (Friedman's test and Wilcoxon's test). Finally, it should be noted that none of the variables in Table 1 had a significant relationship with the HADS, SUD or MAC-RF scores, which did not require any particular adjustment for the production of results.

The observed results show that for all variables there is a difference between pre-test and post-test that is consistent with a decrease in scores. This shows a significant decrease in scores for anxiety, depression and the SUD scale, which drops from 8.3 to 2.4 after 4 sessions (Table 2). The scores then appear to stabilize and remain stable over time between the post-test and the third assessment one week after the post-test. An effect with regard to fear of the unknown was also observed in that the score decreased nearly by half and showed to hold and remain stable one week after the post-test.

This shows very clearly that EMDR therapy resulted in significantly improved results (down 7 points for anxiety, down 2 points

Table 1
Characteristics of participants receiving EMDR therapy (n=21)

Variables	
Age (years)	m=45.1 (s=11.1)
Gender	Women: 52.4% (11/21) Men: 47.6% (10/21)
Number of children	No children: 0.95% (2/21) 1 child: 42.8% (9/21) 2 children: 47.6% (10/21)
Level of education	Below BAC: 52.4% (11/21) BAC/BAC+: 46.6% (10/21)
Marital status	Married : 66.7% (14/21) Co-habitation relationship: 14.3% (3/21) Divorced: 19% (4/21)
Current medication following hospital discharge	Antidepressant: 19% (4/21) Anxiolytic: 23.8% (5/21) Antidepressant and anxiolytic: 38.1% (8/21) No medication: 19% (4/21)
Time elapsed since hospital discharge	Less than 1 month: 4.8% (1/21) Between 1 and 2 months: 38.1% (8/21) Between 2 and 3 months: 57.1% (12/21)

for depression, down 6 points for SUD, and down 10 points for fear of the unknown).

Discussion

The objective of this exploratory study was to evaluate the effectiveness of brief EMDR therapy based on a routine care application of the standard protocol. Our results, taking into account the size of the sample, highlighted the effectiveness of the four-session treatment in reducing anxiety and depressive symptoms, distress and fear of the unknown induced by exposure to the COVID-19 virus.

Moreover, this reduction in symptoms was found to remain stable after one week.

In terms of indicators, the SUD levels decreased significantly and remained stable after one week, despite an anxiety-provoking context that is ongoing.

The effectiveness of several sessions of EMDR therapy in reducing these types of symptoms is corroborated by recent literature (Wilson et al., 2018; Navarro et al., 2018; Bossini et al., 2020; Karadag et al., 2020) demonstrating the effects of this therapy on reactive disorders that occur in response to a stressful and potentially traumatic life event, or one that is ongoing (Shapiro, 2012; Jarero et al., 2018; Osorio et al., 2018; Smyth-Dent et al., 2019).

Here, the originality of the approach lies not only in the specificity of the event it desensitizes, but how it impacts patients' future orientation.

Indeed, the COVID-19 patients who participated in this study experienced a potentially traumatic event, i.e., a disease responsible for a global pandemic and hundreds of thousands of deaths worldwide, the experience of being hospitalized for intensive care compounded by fear about possible consequences, and numerous concurrent stress factors undermining important personal resources. Unlike a single event with well-defined temporal boundaries (before vs. after), COVID-19 existed as a threat before the patient was

Table 2
Mean scores, standard deviations and statistical tests obtained for the different variables according to the evaluation phases (n=21).

	Evaluation phases			
	Pre-test	Post-test(after 4 sessions)	After 1 week	Friedmann test
HADS Anxiety	17.1 ^a (1.9)	10.8 ^b (2.2)	11.2 ^b (1.7)	X ² =33.4, ddl 2, p<.001
HADS Depression	14.6 ^a (2.8)	12.6 ^b (2.06)	12.2 ^b (1.6)	X ² =9.5, ddl 2, p<.01
SUD	8.3 ^a (1.05)	2.4 ^b (1.2)	2.3 ^b (1.3)	X ² =34.4, ddl 2, p<.001
MAC-RF	23.8 ^a (4.19)	13.09 ^b (2.7)	11.2 ^b (2.5)	X ² =33.2, ddl 2, p<.001

Note: Letters between row averages indicate a significant difference in Wilcoxon minus tests at the p<.05 cutoff.

affected but continues to be a threat and part of the patient's daily life after hospital discharge. This presents us with a unique context that appears to emerge from the experience of a single event, characteristic of what may lead to PTSD, but removes the context of complex trauma and repeated events. Similar to a cancer diagnosis, COVID-19 forces patients to confront the possible reality of death, without an "identified aggressor" and with a risk not of recurrence but of re-contamination or sequelae, leaving doubt about the prospect of full recovery in the future.

It is in this nuanced context that EMDR therapy must be effective, as it not isolated to working through a single potentially traumatic event that essentially enters the individual's life, it needs to address the fact that the experience is one that has lasted for several weeks, is one the individual may continue to face, which undermines feeling safe in the present. Given the current uncertain circumstances specific to the global pandemic, which at the time of this study are still evolving in terms of known consequences and possible cures, it is not surprising that we were unable to fully reset all symptoms of anxiety or distress, as we would normally expect to see when treating PTSD with EMDR.

However, the significant decrease in symptoms and the fact that these lower levels held for one week following the treatment suggests to us that the patients' adaptive coping mechanisms were strengthened, improving the accessibility and mobilization of resources to prevent chronic development of the disorder and potential onset of PTSD.

These conceptions allow us to reconsider the interest of EMDR therapy in different therapeutic contexts than those related to PTSD. Managing psychological consequences of physical pathologies such COVID-19 constitutes a new field of intervention for this approach (Tarquinio & Tarquinio, 2015).

As we alluded to earlier, stressors associated with COVID-19 are not temporally time bound as they are classically seen in PTSD. For COVID-19 patients, these stressors accumulate in such a way that the slightest change in the body or reoccurrence of a specific symptom can trigger anguish or extreme fear. In this way, framing COVID-19 as an *extreme life situation* versus a traumatic event would more aptly describe the complexity surrounding the phenomenon and allow us to view the effects from a wider lens than PTSD alone. Extreme life situations are those that place ordinary people in radically different conditions than their normal daily lives. These are events that are both life-changing and life-threatening. Several aspects characterize extreme life situations. For the most part, these are events that occur abruptly and mark a radical break from an individual's previous way of living. As the world is currently witnessing with the COVID-19 pandemic, these situations demand changes in our daily lives to the extent that we can no longer rely on established resources (material, psychological, social, or symbolic). In other words, they force us to manage a set of challenges unprepared. The notion of unpredictability introduced into our daily lives can incite feels of being out of control, a known contributing factor to stress and poor health. As to the nature of these upheavals, it is not just changing material conditions that pose a problem, it can fundamentally affect how we perceive the world and events occurring around us. In the perspective adapted here, these different forms of disruption or upheaval center on life endangerment; we are faced with the extreme when an event involves, in one way or another, a real risk of death and not just life-threatening circumstances. Thus, the COVID-19 pandemic falls under the category of an extreme life situation in that it represents a true mortality risk, but also for how it introduces fractures into our daily life experience.

Performing EMDR therapy treatment typically involves developing a targeting plan that begins by identifying the experience that is causing the problem and accessing the dysfunctional memory network to desensitize the event and decrease the problematic symptoms. In the present case of COVID-19 where we are faced with an acute and recent situation, we found that symptom reduction could

be achieved in four-sessions; we observed a generalization effect on the current triggers of the problem and overall improvement in the participants' outlook. EMDR therapy, as proposed in this article, can be effective when used in an abbreviated context (four sessions versus the habitual 6-12 sessions) to process a recent event using standard protocols, allows for rapid reduction of current symptomatology and improvement of the patient's outlook and future perspective; both contribute to strengthening adaptive coping mechanisms for dealing with an ongoing, anxiety-provoking situation. This is the first time EMDR has been used to desensitize a single event where the specificity is the absence of temporal boundaries and highlights not only the reduction of symptoms but the positive change in patient outlook. Applied in the context of the COVID-19 pandemic, places us at an interface between use of protocols on recent events allowing desensitization of potentially traumatic information, decreasing the reactive symptoms, and the use of a standard EMDR protocol for reprocessing early life adverse experiences, that taken together, lessen symptoms experienced by the patient.

This study is not without limitations. Given that we based this research on ongoing treatments and specifics of the situation, we can only present a pilot study here. However, the scope of this research remains limited due to the absence of a control group, the small number of participants and therefore the absence of an effect size. Naturally, future research should continue to explore how EMDR therapy can be used to interface with disease and reactive disorders.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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