Understanding the mental health impacts of COVID-19 through a trauma lens

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ABSTRACT
This special issue of the European Journal of Psychotraumatology (EJPT) presents the first studies published by EJPT on COVID-19. We present 26 qualitative and quantitative studies assessing the prevalence of trauma-related symptoms and psychopathology within specific vulnerable populations such as health-care workers, students, children, and managers, or more broadly at a country level with a diverse set of outcomes including post-traumatic stress, moral injury, grief and post-traumatic growth. Intervention studies focus on whether telehealth delivery of mental health therapy in the pandemic environment was useful and effective.

It is clear that the pandemic has brought with it a rise in trauma exposure and consequently impacted on trauma-related mental health. While for many individuals, COVID-19-related events met criteria for a DSM-5 Criterion A event, challenges remain in disentangling trauma exposure from stress, anxiety, and other phenomena. It is important to determine the contexts in which a trauma lens makes a useful contribution to understanding the mental health impacts of COVID-19 and the ways in which this may facilitate recovery. The papers included in this Special Issue provide an important and much-needed evidence-based foundation for developing trauma-informed understanding and responses to the pandemic.

Comprendiendo los impactos del COVID-19 en la salud mental a través de los lentes del trauma
Este número especial de la Revista Europea de Psicotraumatología (European Journal of Psychotraumatology—EJPT) presenta los primeros estudios publicados por EJPT sobre COVID-19. Presentamos 26 estudios cualitativos y cuantitativos que evalúan la prevalencia de los síntomas y la psicopatología relacionados con el trauma en poblaciones vulnerables específicas, como trabajadores de la salud, estudiantes, niños y niñas, administradores o, en general, a nivel de país con un conjunto diverso de resultados que incluyen el estrés posttraumático, el daño moral, el dolour, y el crecimiento posttraumático. Los estudios de intervenciones se centran en si la prestación de telemedicina de terapia de salud mental en el entorno pandémico fue útil y eficaz.

Está claro que la pandemia ha traído consigo un aumento en la exposición al trauma y, en consecuencia, ha tenido un impacto en la salud mental relacionada con el trauma. Si bien para muchas personas los eventos relacionados con el COVID-19 cumplieron los criterios para un evento del criterio A del DSM-5, persisten los desafíos para desenredar la exposición al trauma del estrés, la ansiedad, y otros fenómenos. Es importante determinar los contextos en los que un lente de trauma hace una contribución útil para comprender los impactos de COVID-19 en la salud mental y las formas en que esto puede facilitar la recuperación. Los artículos incluidos en este Número Especial brindan una base importante y muy necesaria, basada en la evidencia, para desarrollar una comprensión y respuestas a la pandemia informadas sobre el trauma.

透过创伤镜头了解 COVID-19 对心理健康的影响
欧洲精神创伤学杂志 (EJPT) 的这次特刊介绍了 EJPT 发表的首批 COVID-19 相关研究。我们提供了 26 项定性定量研究，探讨创伤相关症状和精神疾病的流行情况，特定易感人群（例如卫生保健工作者、学生、儿童、管理人员），或更广泛的国家层面多种结果（包括创伤后应激、道德伤害，悲伤和创伤后成长）。干预研究重点关注在疫情期间远程医疗提供心理健康治疗是否有用和有效。

很明显，疫情带来了创伤暴露的增加，从而影响了创伤相关的心理健康。虽然对于许多人来说，COVID-19 相关事件符合 DSM-5 标准 A 事件的标准，但在将创伤暴露与应激、焦虑和其他现象分开方面仍然存在挑战。确定在何种背景中创伤镜头对理解 COVID 对心理健康的影响以及可能促进康复方法做出有用贡献很重要。本特刊中包含的文章为发展对疫情的创伤知识理解和社会应提供了重要且急需的循证基础。
1. Introduction

When the first-reported cases of a mysterious illness were coming out of China, no-one could have predicted what this meant for the trauma field. As it became evident that we were dealing with a global pandemic, there was a rush to conduct mental health research. Systematic reviews of previous epidemics such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) prepared us for what to expect (Serrano-Ripoll et al., 2020) while early reviews of COVID-19 specific data told us that posttraumatic stress symptoms were high in various populations (Luo, Chua, Xiong, Ho, & Ho, 2020; Vindegaard & Benros, 2020). However, in the early days of COVID-19, it was important for the trauma field to establish whether a trauma lens was useful to explain some of the mental health findings, to better understand risk and resilience in the COVID-19 context, and potentially to help inform which interventions might be useful. In some situations, there was a direct case for applying a trauma lens because certain events met DSM-5 Criterion A (American Psychiatric Association, 2013). These included surviving the COVID-19 illness or sudden death of loved ones. However, in much of the early research, the assumption that COVID-19 equated to trauma was not clearly established.

Once COVID-19 was recognized as a global pandemic, it became clear that COVID-19 was both a national and global disaster, and this recognition meant the trauma field was well-placed to contribute to the research and practice narrative. A quick search of Pub-Med shows that in the past two years there have been many thousands of publications taking a post-traumatic stress lens to the COVID-19 pandemic. As such, it is a good time to reflect on how a trauma lens advances our understanding of the sequelae of this pandemic.

In July 2020, the European Society for Traumatic Stress Studies (ESTSS) published a position paper on trauma-informed responses to address the mental health consequences of COVID-19. (Javakhishvili et al., 2020) A Special Issue of EJPT was announced as a way to promote dissemination of knowledge and experience on a large scale.

2. In this issue

This EJPT COVID-19 Special Issue is a collection of research conducted over the first 18 months of the pandemic, and tracks the development of research as it happened in real time. This research is summarized in Table 1. Initially, we started publishing commentary (n = 3) and literature reviews (n = 1). This was followed by cross-sectional research (n = 16), research protocols (n = 1), and eventually longitudinal (n = 2) and intervention research (n = 3). Publications within this special issue have been grouped into two themes. The first theme covers prevalence of trauma-related symptoms and psychopathology within specific vulnerable populations such as health care workers, students, children, managers, or more broadly at a country level. This research utilizes different methodologies including both qualitative and quantitative techniques and covers a diverse set of outcomes including post-traumatic stress, moral injury, grief and post-traumatic growth. The second theme is related to interventions. These studies focus on whether the pivot to telehealth when delivering mental health therapy in the pandemic environment was useful and effective.

It is important when reading this literature to recognize that rates of trauma exposure and PTSD reported in any given paper are highly dependent on where the research was conducted and what was happening in that country at that time. In many ways, prevalence research represents a snapshot in time. As such, it is important that manuscripts include this contextual information, especially as the pandemic has been enduring over time, and many countries have experienced two, three or four waves of the virus. Prevalence rates of COVID-related mental symptoms or disorders in a specific country or in a specific population may differ over time as the virus infection rates fluctuate. Furthermore, prevalence rates will be impacted by the design of the study with the majority of studies relying on the internet as a way of recruiting participants. (e.g., Graf-Vlachy, Sun, & Zhang, 2020) While web-based surveys represent a pragmatic and useful way to collect data during a pandemic, they also have their limitations in generalizability.

The COVID-19 pandemic saw a sudden shift to telehealth for trauma-related mental health in countries where this was possible. A number of studies in this Special Issue investigated whether this was effective and satisfactory for patients (Bongaerts, Voorendonk, van Minnen, & de Jongh, 2021; ter Heide et al., 2021; Wild et al., 2020). This research is important because many clinics may be interested in maintaining a large focus on telehealth once the pandemic is brought under control. Generally, this research found that patients who received telehealth were just as satisfied with their treatment as those who received their treatment face-to-face, although subpopulations such as those with higher symptoms preferred face-to-face.

3. Moving forwards

The papers included in this Special Issue provide an important and much-needed evidence-based foundation for developing trauma-informed understanding
Table 1. A brief description of the COVID-19 studies in this special edition of the European Journal of Psychotraumatology.

### Commentary

Graf-Vlachy, L., Sun, S., Zhang, S. (in press) Predictors of managers' mental health during the COVID-19 pandemic. This letter to the editor found that Managers' 'illegitimate tasks' caused by COVID-19 was associated with anxiety, distress and depression. Graf-Vlachy et al., 2020.

Gersons, B. P., Smid, G. E., Smit, A. S., Kazlauskas, E., & McFarlane, A. (2020). Can a 'second disaster' during and after the COVID-19 pandemic be mitigated? This commentary presents lessons from past disasters suggesting that communities and their leaders, as well as mental healthcare providers, need to pay attention to fear regarding the ongoing threat, as well as sadness and grief, and to provide hope to mitigate social disruption. Gersons, Smid, Smit, Kazlauskas, & McFarlane, 2020.

Denckla, C. A., Gelaye, B., Orlinsky, L., & Koenen, K. C. (2020). REACH for mental health in the COVID19 pandemic: an urgent call for public health action. This comment piece proposes a mental health equivalent to the World Health Organization’s ‘Do the Five’ concept, and describe the ‘REACH for Mental Health’ public health measure launched at the Harvard T.H. Chan School of Public Health. (Denckla, Gelaye, Orilinsky, & Koenen, 2020).

### Literature Review

Allan, S., Bealey, r., Birch, J., Cushion, T., Parke, S., Sergi, G., Bloomfield, M., & Meiser-Stedman, R. (2020) The prevalence of common and stress-related mental health disorders in healthcare workers based in pandemic-affected hospitals: a rapid systematic review and meta-analysis, European Journal of Psychotraumatology, 11:1. This systematic review examined the impact on Health Care Workers working in hospital where pandemic affected patients are treated. Most of the studies related to SARS and found that posttraumatic stress and general psychological distress were elevated, and this is maintained over time. (Allan et al., 2020).

### Cross-sectional Studies

Chen, C., Tang, S. (in press) Profiles of grief, post-traumatic stress, and post-traumatic growth among people bereaved due to COVID-19. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Pat-Horenczyk, R., Bergman, Y., M. Schiff, et al., (in press). COVID-19 related difficulties and perceived coping among university and college students: The moderating role of media-related exposure and stress. This qualitative study found that caregivers indicated that preschool children had difficulties understanding causality and overestimated the risk of COVID-19 infection. Caregivers observed their children’s preoccupation with COVID-19 and worries in conversations, play and drawings as well as in behavioural changes – increased arousal, cautionousness, avoidance and attachment-seeking behaviour. (Pat-Horenczyk et al., 2021).

Vasileva, M., Alisic, E., De Young, A. (in press) COVID-19 Unmasked: Preschool children’s negative thoughts and worries during the COVID-19 pandemic in Australia. This qualitative study found that caregivers indicated that preschool children had difficulties understanding causality and overestimated the risk of COVID-19 infection. Caregivers observed their children’s preoccupation with COVID-19 and worries in conversations, play and drawings as well as in behavioural changes – increased arousal, cautionousness, avoidance and attachment-seeking behaviour. (Pat-Horenczyk et al., 2021).

Sun, R., Qi, J., Huang, J., Zhou, X. (in press). Network analysis of PTSD in college students across different areas after the COVID-19 epidemic. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Maftei, A., Holman, A. (in press). The prevalence of exposure to potentially morally injurious events among physicians during the COVID-19 pandemic. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Greene, T., Harju-Seppanen, J., Adeniji, M., Steel, C., Grey, N., Brennan, C., Bloomfield, M., Billings, J. (in press) Predictors and rates of PTSD, depression and anxiety in UK frontline health and social care workers during COVID-19. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Ikizer, G., Nuray Karanci, A., Gull, E., Dilekler, I. (in press) Posttraumatic stress, growth, and depression during the COVID-19 pandemic: Evidence from Turkey. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Ju, Y., Liu, J., Ng, R., Liu, B., Wang, M., Chen, w., Huang, M., Yang, A., Shu, K., Zhou, Y., Zhang, L., Liao, M., Liu, J., Zhang, j. (in press). Prevalence and predictors of PTSD in patients with cured COVID-19 one month post-discharge. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Off, M., Primasari, L., Qing, Y., Coimbra, B. M., Hovnanyan, A., Grace, E., … Consortium, T. G. C. (2021). Mental health responses to COVID-19 around the world. This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

Celik, D., Alpay, E.H., Celebi, B., Turkali, A. Intolerance of uncertainty, rumination, post-traumatic stress symptoms and aggression during COVID-19: A serial mediation model (in press). This study investigated the mental health of people bereaved due to COVID-19. Using latent profile analysis the authors found four classes with the majority of participants falling in a moderate or high symptom class. Those who lost someone younger, lost a partner or shared a close relationship with the deceased were most vulnerable to high symptoms. (Chen & Tang, 2021).

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### Table 1. (Continued)

| Liu, C., Huang, N., Ahmed, F., Shahid, M., Wang, X., Guo, J. (2021). The Reverse Buffering Effects of Social Support on the Relationships between Stresses and Mental Health: A survey of Chinese adults during the COVID-19 lockdown (in press). | The study revealed that stresses from lockdown policy presented stronger associations with mental health symptoms for depressive symptoms and posttraumatic stress symptoms than stresses from pandemic fear. Moreover, greater social support enhanced the positive associations between stresses and mental health symptoms. (Liu et al., 2021) |
| Bountress, K.E., Cusack, SE, Conley, AH, Aggen, SH, Vassileva, J., Dick, DM, Amstadter, AB & The Spat for Science Working Group (2021). Unpacking the impact of the COVID-19 pandemic: identifying structural domains. | This study examined the structure of pandemic related stressor domains in a student cohort. Following estimation of a single-factor model, a correlated five factors model, as well as two second-order factor structures, the five correlated factors (exposure, worry, housing/food instability, social media, substance use) model was found to represent the data most appropriately, while producing an interpretable solution. (Bountress et al., 2021) |
| Rossi, R., Soci, V., Talevi, D., Niouli, C., Pacchi, F., Di Marco, A., … & Offi, M. (2021). Trauma-spectrum symptoms among the Italian general population in the time of the COVID-19 outbreak. European Journal of Psychotraumatology, 12(1), 1855888. | This study found that a wide range of trauma-spectrum symptoms were reported by a large Italian sample during the COVID-19 pandemic. The GPS symptoms clustered best in three factors: Negative Affect symptoms, Core PTSS, and Dissociative symptoms. In particular, high rates of core PTSS and negative affect symptoms were associated with the COVID-19 pandemic in Italy and should be routinely assessed in clinical practice. (Rossi et al., 2021) |
| Schmidt, S. J., Barblan, L. P., Lory, I., & Landolt, M. A. (2021). Age-related effects of the COVID-19 pandemic on mental health of children and adolescents. | Between 2.2% and 9.9% reported emotional and behavioural problems above the clinical cut-off and between 15.3% and 43.0% reported an increase in these problems during the pandemic. Preschoolers (1–6 years) had the largest increase in oppositional-defiant behaviours, adolescents reported the largest increase in emotional problems. Adolescents experienced a significantly larger decrease in emotional and behavioural problems than both preschoolers and school-children. (Schmidt, Barblan, Lory, & Landolt, 2021) |
| Chao, M., Chen, X., Liu, T., Yang, H., & Hall, B. J. (2020). Psychological distress and state boredom during the COVID-19 outbreak in China: the role of meaning in life and media use. | This study used cross-sectional surveys conducted over different points in time (each individual only participated once). The risk of MOD on IHQ-2 increased by 71.2%, from 12.5% in 2018 to 21.4% in 2020. During COVID, the weighted national prevalence of people at risk of MOD was 14.9%. The weighted national prevalence of people at risk of GAD was 11.4%. (BinDhm, et al., 2021) |

#### Longitudinal Studies

| BinDhm, N. F., Althumani, N. A., Basyouni, M. H., Alageel, A. A., Alghnham, S., Al-Qunaibet, A. M., … & Ad-Dab’bagh, Y. (2021). Saudi Arabia Mental Health Surveillance System (MHSS): Mental health trends amid COVID-19 and comparison with pre-COVID-19 trends. | Analyses of the levels of disturbance associated with the symptoms provided support to that four-fold distinction of patterns of responses. Furthermore, resilience responses were the most common psychological response to the pandemic. The main variables increasing the probability of resilience to COVID-19 were being male, older, having no history of mental health difficulties, higher levels of psychological well-being and high identification with all humanity. Also, having low scores in several variables (i.e. anxiety and economic threat due to COVID-19, substance use during the confinement, intolerance to uncertainty, death anxiety, loneliness, and suspiciousness) was a significant predictor of a resilient response to COVID-19. (Valiente, Vázquez, Contreras, Peinado, & Trucharte, 2021) |
| Valiente, C., Vázquez, C., Contreras, A., Peinado, V., & Trucharte, A. (2021). A symptom-based definition of resilience in times of pandemics: Patterns of psychological responses over time and their predictors. | This study indicated that the effect of state boredom on anxiety and stress, but not depression, were mediated by media use and that sense of meaning in life modified this association. Meaning in life served as a risk factor, rather than a protective factor for the negative psychological outcomes when people experienced boredom. The association between boredom and media use was significant for high but not low meaning in life individuals. (Chao, Chen, Liu, Yang, & Hall, 2020) |

#### Intervention Studies

| ter Heide, J., de la Rie, S., de Haan, A., Boeschoten, M., Nijdam, M., Smid, G., Wind, T., Mooren, T. (in press) Wellbeing and clinical videoconferencing satisfaction among patients in psychotrauma treatment during the coronavirus pandemic: Cross-sectional study. | This study found that COVID-19 was associated with increased mental health symptoms in participants already seeking mental health care. Videoconferencing was found to be acceptable with receipt of therapy, although face-to-face treatment remained the preference for specific target groups with limited access to VCT (such as refugees) and patients with high levels of general psychopathology. (ter Heide et al., 2021) |
| Bongaerts, H., Voorendonk, E. M., van Minnen, A., & de Jongh, A. (2021). Safety and effectiveness of intensive treatment for complex PTSD delivered via home-based telehealth. | Pilot study of six patients. Suggests that intensive, trauma-focused treatment of severe or Complex PTSD delivered via home-based telehealth is feasible, safe and effective, and can be a viable alternative to face-to-face delivered intensive trauma-focused treatment. (Bongaerts et al., 2021) |
| Wild, J., Wannock-Parkes, E., Murray, H., Kerr, A., Thew, G., Grey, N., … & Ehlers, A. (2020). Treating posttraumatic stress disorder remotely with cognitive therapy for PTSD. | This study describes ways to adapt CPT-PTSD treatment to be delivered remotely so that patients presenting with PTSD during the COVID-19 pandemic can benefit from this evidence-based treatment. (Wild et al., 2020) |

#### Research protocol

| De Young, A., Vassileva, M., Boruszak-Kziukiewicz, J., Demipence Scents, D., Christie, H., Egberts, M., Anastassiou-Hadjicharalambouzi, X., Marsac, M., Ruiz, G. COVID-19 Unmasked Global Collaboration Protocol: Longitudinal cohort study examining mental health of young children and caregivers during the pandemic. | The collaborating researchers aim to (1) describe and compare the COVID-19 related experiences within and across countries; (2) examine mental health outcomes for young children (1 to 5 years) and caregivers over a 12-month period during the COVID-19 pandemic; (3) explore the trajectories/time course of psychological outcomes of the children and parents over this period and (4) identify the risk and protective factors for different mental health trajectories. Data will be combined from all participating countries into one large open access cross-cultural dataset to facilitate further international collaborations and joint publications. Currently, partnerships have been formed with 9 countries (Australia, Cyprus, Greece, the Netherlands, Poland, Spain, Turkey, the UK, and the USA). (De Young, et al., 2021) |
and responses to the pandemic. Yet, many unanswered questions about trauma during COVID-19 still remain. It is clear that the pandemic has brought with it a rise in trauma exposure and consequently impacted on trauma-related mental health. Yet, for many individuals, while COVID-19 has undoubtably been stressful and challenging, for many people, their experience may not meet DSM-5 Criterion A (American Psychiatric Association, 2013) definition for a traumatic event, which has implications for the diagnosis of various disorders including post-traumatic stress disorder and acute stress disorder (Norrholm et al., 2021). One of the main challenges therefore is disentangling trauma from stress, anxiety, and other phenomena, and determining the contexts in which a trauma lens is (or is not) helpful. Importantly, research should examine the impact on COVID-19 on trauma-exposed communities (such as natural disaster survivors or survivors of childhood trauma) to see how COVID-19 and its consequences have impacted on recovery trajectories or pre-existing symptoms.

A second challenge is to understand how to translate these findings that may be specific to time and place, thereby increasing our general understanding of risk and resilience in the face of global crises. One of the solutions is to come together to pool data in order to conduct comparative research and identify universal risk factors. Optimally, however, this collaborative research will not be conducted after disaster strikes. Rather, we should focus on disaster preparedness, and develop international research networks and infrastructure to launch new multi-country studies as and when required. We already have the foundations of this with the European Society of Traumatic Stress Studies (ESTSS) and the International Society of Traumatic Stress Studies (ISTSS), professional societies, and with the Global Collaboration on Traumatic Stress where researchers from around the world work together on global topics like COVID-19 (https://www.global-psychoitrauma.net/covid-19-projects).

A third challenge is to understand the long-term impacts of the pandemic on mental health. Most of the research published so far has been based on cross-sectional research, and this Special Issue is reflective of that trend. Yet while some pandemic-related effects are immediate and direct and can be captured by cross-sectional studies, it is crucial to understand the factors that contribute to distress, resilience and recovery over time. Furthermore, it is likely that central risk factors for mental health problems, such as financial deprivation, bereavement, and chronic physical health problems, will increase vulnerability to mental disorders for many years to come, and we must gather prospective longitudinal data that can help us understand how best to predict, mitigate and prevent these anticipated negative outcomes. In particular, we need to consider the countries and communities that were badly affected by COVID-19 illness, and those that were already vulnerable with low levels of resources even before the pandemic broke out.

COVID-19 highlighted the urgency of secondary prevention of mental disorders following traumatic exposure, and tertiary prevention of comorbidity and other complex presentations. However, while COVID-19 has been an extreme and unprecedented crisis, it is not the only global crisis that we currently face. Given the threat of global crises such as pandemics, terrorism, and climate change, which raise the risk of trauma exposure, we must come together to research and learn from COVID-19 to better identify high-risk individuals, deliver timely support and interventions when they are needed, and understand factors that may boost resilience (Bonanno, 2021; Denckla et al., 2020). With this in mind, the current EJPT Special Issue represents the first phase of this mission. A second EJPT Special Issue of COVID-19 related studies will also be published.

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