Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

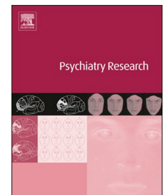
Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Psychiatry Research 293 (2020) 113426

Contents lists available at ScienceDirect

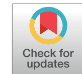
Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres



Short communication

Mount Sinai's Center for Stress, Resilience and Personal Growth as a model for responding to the impact of COVID-19 on health care workers



Jonathan DePierro[a,*], Craig L. Katz[a,b,c], Deborah Marin[a], Adriana Feder[a], Laura Bevilacqua[a], Vansh Sharma[a], Alicia Hurtado[a,d], Jonathan Ripp[b,d], Sabina Lim[a], Dennis Charney[a,e,f]

[a] Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States
[b] Department of Medical Education, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States
[c] Department of Systems Design and Global Health, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States
[d] Office of Well-Being and Resilience, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States
[e] Department of Pharmacology, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States
[f] Department of Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY 10029, United States

ARTICLE INFO

Keywords:
Post-traumatic stress
Resilience
Health care workers

ABSTRACT

The COVID-19 pandemic is anticipated to have a prolonged adverse mental health impact on health care workers (HCWs). The supportive services implemented by the Mount Sinai Hospital System in New York for its workers culminated in the founding of the Mount Sinai Center for Stress, Resilience, and Personal Growth (CSRPG). CSRPG is an innovative mental health and resilience-building service that includes strong community engagement, self- and clinician-administered screening, peer co-led resilience training workshops, and care matching. The long-term sustainability of similar programs across the United States will require federal funding.

As a result of the COVID-19 pandemic, healthcare workers faced loss of life, including colleagues, friends and family members; fears of getting infected or spreading the virus to family; reassignment to unfamiliar settings outside their area of expertise; and concerns about the long-term economic impact of the pandemic. These stressors are present for both medical providers and non-clinical support staff, such as administrative assistants, security, and environmental services personnel. In this article, we describe the efforts of the New York-based Mount Sinai Healthcare System (MSHS) to address the impact of the pandemic on the emotional wellbeing of all its employees.

The MSHS has over 40,000 employees across eight member hospitals. As the United States suffered the greatest number of confirmed cases and deaths globally (US), with New York State as one of the clear "epicenters" (Johns Hopkins University, 2020), MSHS workers were at high risk of distress. The MSHS Employee and Faculty Crisis Support Task Force began in March 2020. In short order, the group developed a framework of staff support response based on a hierarchy of need (Ripp et al., 2020). This task force, comprised of members from the Office of Well-being and Resilience, Psychiatry Department and other hospital areas, fielded a multitier program including temporary housing and meals; over 100 "mental health liaisons" providing in-person and remote psychological first aid (Everly Jr and Lating, 2017) to staff on medical units and emergency rooms; multisensory "recharge rooms;" virtual support groups; and a 24/7 staff support line. Clear, ongoing, and candid communication between the task force and stakeholders was central to its mission and success. Attention to responsive, caring and thoughtful communication, particularly from leaders, was in keeping with what the health care workforce's expressed needs were in times of crisis (Shanafelt et al., 2020). However, based on our experience with prior disasters, including 9/11/01 (e.g. (DePierro et al., 2020)), it became evident that a longer-term workforce mental health and resilience program was needed.

The Center for Stress, Resilience and Personal Growth (CSRPG), founded in April 2020, is to our knowledge the first of its kind in the United States. Services address the full spectrum of mental health presentations that are anticipated, including those workers who are doing well and want additional support and those struggling more with active psychological symptoms. As described below, CSRPG provides mental health screening, resilience-promoting workshops, and personalized service referrals. In parallel to its employee-facing services, CSRPG also has a research arm that draws upon MSHS's expertise in the psychobiology of human resilience (e.g. (Feder et al., 2019)). Prior research work by our group with a longitudinal cohort of 9/11 responders, which highlighted the importance of social support, emotion-focused coping, and sense of purpose in supporting resilient trajectories (Feder et al., 2016), directly informed our clinical programming. A further distinguishing factor is that CSRPG's "building blocks" from the very start have been stakeholder involvement. What follows is a brief

* Corresponding author at: Center for Stress, Resilience and Personal Growth, One Gustave L. Levy Place, Box 1230, New York, NY 10029.

https://doi.org/10.1016/j.psychres.2020.113426
Received 25 June 2020; Received in revised form 19 August 2020; Accepted 23 August 2020
Available online 23 August 2020
0165-1781/ © 2020 Elsevier B.V. All rights reserved.

overview of CSRPG's current service offerings.

1. Wide reach

CSRPG has leveraged many resources within the MSHS to increase accessibility. First, an "accelerator," a method of community-based participatory research, is being utilized to integrate system-wide stakeholder feedback into service development (Horowitz et al., 2017). Second, a mental health and wellness mobile app was developed in approximately one month, from conception to launch. The app allows workers to self-screen for mental health symptoms, track progress over time, and connect to MSHS wellness resources. Finally, the formation of CSRPG also highlighted the importance of multidisciplinary collaboration among many existing MSHS services. For example, CSRPG builds upon the already established framework created by the Office of Well-Being and Resilience (OWBR), whose mission has been to enhance physician, resident, and student well-being and resilience by creating and driving initiatives that improve workplace wellbeing.

2. Educational workshops

Resilience has been defined many ways, including as the ability to adapt successfully to adversity. While resilience is at times seen as a character trait, there is also evidence that it can be cultivated with intervention (Feder et al., 2019). To that end, CSRPG has developed an 11-meeting series of manualized peer-co-led resilience workshops, comprising an introductory session followed by facilitated discussion and teaching sessions centered on one of 10 evidence-based resilience factors ((Southwick and Charney, 2018); See Table 1). These workshops will meet several times per week, coinciding with common work shifts and break times. Each attendee will make an individualized resilience plan and may opt to receive individual coaching with a staff clinician.

An initial "class" of 41 peer co-leaders completed training sessions in May and June 2020. Training comprised an overview of the science of resilience, review of workshop materials, and participation in at least one practice meeting focused on a resilience factor. Peer leaders will then co-facilitate workshops with a clinical social worker, psychiatrist, psychologist, or chaplain.

3. Mental health care pathways

CSRPG addresses the needs of workers with mental health symptoms in several ways. In addition to self-screening implemented in the above-noted app, CSRPG began to offer confidential remote mental health screenings and resource navigation in mid-June 2020. Barriers to care were reduced by developing one central telephone number for all HCW mental health referrals across the MSHS. Finally, CSRPG is working with MSHS behavioral health leadership to build a dedicated mental health treatment service specifically for our HCWs.

Conclusion

We believe that systematic efforts to "give back" to employees with free, non-mandatory services are essential for healing, retention of staff, and maintaining high quality patient care. We offer CSRPG as one model for these efforts. However, it is important to note that sustainability of HCW programs will require ongoing federal support, particularly given the economic impact of the pandemic on healthcare systems (Charney et al., 2020). This funding has precedent in legislation providing for the screening and medical treatment of 9/11 survivors and responders in the United States.

Funding sources

Center for Stress, Resilience and Personal Growth research projects will be supported in part by the Ehrenkranz Laboratory for Human Resilience at the Icahn School of Medicine at Mount Sinai (Co-Directors Drs. Feder and Charney).

CRediT authorship contribution statement

Jonathan DePierro: Conceptualization, Writing - original draft, Writing - review & editing. **Craig L. Katz:** Conceptualization. **Deborah Marin:** Conceptualization, Writing - review & editing. **Adriana Feder:** Writing - review & editing. **Laura Bevilacqua:** Writing - review & editing. **Vansh Sharma:** Writing - review & editing. **Alicia Hurtado:** Writing - review & editing. **Jonathan Ripp:** Writing - review & editing. **Sabina Lim:** Writing - review & editing. **Dennis Charney:** Conceptualization, Writing - review & editing.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests. Drs. Dennis Charney and Adriana Feder are named co-inventors on an issued patient in the United States, and several issued patients outside the U.S. filed by the Icahn School of Medicine at Mount Sinai (ISMMS), for the use of ketamine as a therapy for PTSD. This intellectual property has not been licensed. In addition, Dr. Charney is named co-inventor on several issued U.S. patents, and several pending U.S. patent applications, filed by ISMMS for the use of ketamine as a therapy for treatment-resistant depression and suicidal ideation. ISMMS has entered into a

Table 1
Ten resilience factors

Resilience Factor	Activity
Optimism and positive emotions	Focus on the positive by reframing events positively, avoid rumination, schedule pleasant activities, replace negative thoughts with realistically optimistic/positive ones
Facing fears	View fear as a guide and opportunity, focus on goals/mission, acquire information about feared situations/context, face fears with social support, and learn skills to master fear (e.g. deep breathing).
A personal moral compass	Identify core values, discuss values with someone you admire, and act according to your values; be altruistic
Faith and spirituality	Prayer or daily meditation, read spiritual or sacred texts, and engage in physical practice including yoga or martial arts and creative practice including poetry and singing.
Social Support	Know who you can turn to for support, invest intentional effort in seeking and giving support, and build out meaning support network
Resilient role models	Observe the skill of a role model, break down the skill into segments, practice, and get feedback from the role model
Physical wellbeing	Develop goals for physical exercise, follow an increasingly intense exercise regimen, practice healthy eating and sleep habits, consider being fit as part of your identity, and maintain a regular schedule
Cognitive fitness	Place yourself in environments that support learning and surround yourself with people who motivate you to grow as a person.
Cognitive and emotional flexibility	Accept that some things are out of your control, appraise situations with perspective to open up new possibilities, learn from failures, rely on humor to reframe situations, and apply emotion regulation skills.
Meaning and purpose	Search for meaning in the experiences of daily life and in moments of suffering; when facing a challenge ask, "what is life asking of me?"

Note: Further details on the scientific foundation of these resilience factors can be found in Southwick and Charney (2018) and Feder et al (2019).

licensing agreement with Janssen Pharmaceuticals, Inc. and it has and will receive payments from Janssen under the license agreement related to these patents. As a co-inventor, Dr. Charney is entitled to a portion of the payments received by the ISMMS. Since SPRAVATO (esketamine) has received regulatory approval for TRD, ISMMS and Dr. Charney as its employee and a co-inventor, will be entitled to additional payments, under the license agreement. Dr. Charney is named co-inventor on a patent application filed by the ISMMS for the use of intranasally administered neuropeptide Y for the treatment of mood and anxiety disorders. This intellectual property has not been licensed. Dr. Charney is a named co-inventor on several patents filed by ISMMS for a cognitive training intervention to treat depression and related psychiatric disorders. ISMMS has entered into a licensing agreement with Click Therapeutics, Inc., and has and will receive payments related to the use of this cognitive training intervention for the treatment of psychiatric disorders. In accordance with the ISMMS Faculty Handbook, Dr. Charney has received a portion of these payments and is entitled to a portion of any additional payments that the medical school might receive from this license with Click Therapeutics. Dr. Katz is paid national trauma consultant with Advanced Recovery Systems. Drs. DePierro, Ripp, Lim, Hurtado, Sharma, and Bevilacqua have no competing financial or personal relationships that could have appeared to influence work reported in this paper.

Acknowledgments

The authors would like to thank the faculty, staff, trainees and students within the Mount Sinai Health System who responded to the COVID-19 pandemic. We would also like to acknowledge and thank all the clinical and administrative staff at the Mount Sinai Center for Stress, Resilience and Personal Growth. Finally, we would like to acknowledge the essential contributions of the team at the Digital Discovery Program at the Hasso Plattner Institute at Mount Sinai, who developed our mental health mobile app.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at 10.1016/j.psychres.2020.113426.

References

Charney, A.W., Katz, C., Southwick, S.M., Charney, D.S., 2020. A call to protect the health care workers fighting COVID-19 in the United States. Am. J. Psychiatry. https://doi.org/10.1176/appi.ajp.2020.20040535.

DePierro, J., Lowe, S., Katz, C., 2020. Lessons learned from 9/11: mental health perspectives on the COVID-19 pandemic. Psychiatry Res., 113024.

Everly Jr, G.S., Lating, J.M., 2017. The Johns Hopkins Guide to Psychological First Aid. JHU Press.

Feder, A., Fred-Torres, S., Southwick, S.M., Charney, D.S., 2019. The biology of human resilience: opportunities for enhancing resilience across the life span. Biol. Psychiatry 86, 443–453.

Feder, A., Mota, N., Salim, R., Rodriguez, J., Singh, R., Schaffer, J., Schechter, C.B., Cancelmo, L.M., Bromet, E.J., Katz, C.L., 2016. Risk, coping and PTSD symptom trajectories in World Trade Center responders. J. Psychiatr. Res. 82, 68–79.

Horowitz, C.R., Shameer, K., Gabrilove, J., Atreja, A., Shepard, P., Goytia, C.N., Smith, G.W., Dudley, J., Manning, R., Bickell, N.A., 2017. Accelerators: sparking innovation and transdisciplinary team science in disparities research. Int. J. Environ. Res. Public Health 14, 225.

Johns Hopkins University, 2020. Coronavirus global cases by the center for systems science and engineering [WWW document]. URL https://coronavirus.jhu.edu/map.html.

Ripp, J., Peccoralo, L., Charney, D., 2020. Attending to the emotional well-being of the health care workforce in a New York City health system during the COVID-19 pandemic. Acad. Med. 95, 1136–1139.

Shanafelt, T., Ripp, J., Trockel, M., 2020. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. JAMA 323, 2133–2134.

Southwick, S.M., Charney, D.S., 2018. Resilience: The Science of Mastering Life's Greatest Challenges. Cambridge University Press.