UNIVERSITY OF CALIFORNIA

Santa Barbara

Addressing Burnout in Healthcare: Understanding Barriers and Facilitators to Health Promotion and Implementing a Wellness Programming for Resident Physicians

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Counseling, Clinical, and School Psychology

by

Sepideh M. Alavi

Committee in charge:

Professor Maryam Kia-Keating, Chair

Professor Miya Barnett

Professor Steve Smith

September 2024

The dissertation of Sepideh M. Alavi is approved.

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Miya Barnett

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Steve Smith

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Maryam Kia-Keating, Committee Chair

May 2024

DEDICATION

Dedicating this dissertation to my mother, Zohreh Pashandi, a beacon of light, a compassionate mental health care provider, my first mentor, and greatest source of inspiration.

ACKNOWLEDGEMENTS

"How will you look for something when you don't in the least know what it is?... How will you know that what you have found is the thing that you didn't know?"

– *Plato*

There are numerous individuals in my life that have provided support, guidance, and encouragement to help me develop both professionally and in personal ways. I am incredibly grateful, humbled, and privileged to be doing what I absolutely love as a researcher and Clinical Psychologist in-training. I could not have completed this dissertation without the support of my village, and I want to express gratitude to the following people:

To my advisor, Dr. Maryam Kia-Keating, thank you for believing in me and providing an opportunity to work and collaborate with you in many research projects. I so appreciate your invaluable mentorship, kindness, flexibility, guidance, and determination. You have helped me be a better researcher, teacher, consultant, writer, clinician, and whole person. I am humbled by your vision and the incredible lessons I have learned from you throughout the years. Thank you for always encouraging me to reach for the stars.

To Thriving Organizations Thriving Staff (TOTS) collaborators, community advisors, research team, and funders. Ms. Jina Carvalho, thank you for your wisdom, unwavering support, commitment, passion, and mentorship through every step of the TOTS project. This project is so much richer because of the lessons I learned from your wisdom, humility, and compassion. Much gratitude to our team of undergraduate and graduate research assistants, Isaac Bouchard and Mikey Arana, for your dedication to TOTS, and passion for giving back

to the local community. A big thank you to the funders of TOTS project: Ray E. Hosford Memorial Fellowship, Community Volunteer Foundation, and The Fund for Santa Barbara.

To TOTS participants, I have learned invaluable lessons from each of you and inspired by your passion, commitment, and dedication to the field of medicine. Without your participation and support, this project would have not been possible. I am forever grateful for your candor, generosity, and time in sharing your insights, lived experiences, and knowledge with me. Through this work, I hope that I have shed light on structural approaches in addressing burnout and promoting wellness and resilience in physicians, and ways systemic policy changes could be implemented.

To my committee members and clinical supervisors, Drs. Barnett and Smith, thank you for your outstanding clinical supervision, and thought-provoking questions and feedback on my master's thesis and doctoral dissertation. Having you both as clinical and research consultants throughout the years has been one of the best experiences in graduate school. I so appreciate your perspectives, expertise, flexibility, creativity, and patience as I navigated the challenges of doing research and clinical work during COVID-19.

Lastly, I am grateful to my incredible family and friends. I am so blessed by your endless love, support, and joy in celebrating every milestone, and success in graduate school. To my sister, Pegah Alavi, you have been my anchor, biggest cheerleader, and deserve an honorary doctorate. To my soul sister, Sarah Ghods, you are one of my greatest blessings in life, much gratitude for your unconditional love and support. To my father, Morteza Alavi, I appreciate your endless love, dedication to our family, and encouragement to make a difference by helping others. To my mother, Zohreh Pashandi, thank you for your guidance, patience, unwavering love and support, and for your modeling of what it means to be a

strong, independent woman, and for always reminding me to be open and positive as I approached the many opportunities and challenges in graduate school.

CURRICULUM VITA of Sepideh M. Alavi

Sepideh M. Alavi, M.A.

University of California, Santa Barbara
Department of Counseling, Clinical and School Psychology
Santa Barbara, CA 93117
alavi@ucsb.edu
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EDUCATION

2018 – Present (Clinical emphasis)	**Ph.D. Candidate in Counseling, Clinical, and School Psychology** **University of California Santa Barbara,** Santa Barbara, CA (APA Accredited) Dissertation: Addressing Burnout in Healthcare: Understanding Barriers and Facilitators to Health Promotion and Implementing a Wellness Programming for Resident Physicians *Committee:* Maryam Kia-Keating, Ph.D., Miya Barnett, Ph.D., Steve Smith, Ph.D. Clinical Internship: VA Los Angeles Ambulatory Care Center (APA Accredited)
June 2021	**Master of Arts in Counseling Psychology** **University of California Santa Barbara,** Santa Barbara, CA Thesis: Secondary Traumatic Stress and Burnout in Health Care Providers: A Post-Disaster Study Advisor: Maryam Kia-Keating, Ph.D.
May 2013	**Master of Arts in Clinical Psychology** **Teachers College–Columbia University,** New York, NY Global Mental Health & Trauma Track Master's Project: Review of Mental Health Disparities Among Refugees Advisors: Lena Verdeli, Ph.D. & George Bonanno, Ph.D.
December 2010	**Bachelor of Science in Psychology** **Portland State University,** Portland, OR Department of Psychology Graduated *Summa Cum Laude*

SELECTED HONORS, AWARDS, GRANTS & FELLOWSHIPS

2023	**Carol Genetti Mentoring Award**
2022	**Thriving Organizations Thriving Staff Fellowship**
2022	**Ray E. Hosford Memorial Fellowship**
2021	**Counseling, Clinical, and School Psychology Fellowship**
2020	**Multidisciplinary Research on COVID-19 Fellowship**
2019	**UCSB CCSP Travel Award**
2019	**UCSB Graduate Division Travel Award**
2018	**Counseling, Clinical, and School Psychology Fellowship**
2016	**VA High Enrollment Research Site Award**
2013	**International House New York Fellowship**
2012	**Women's International Leadership Fellowship**
2012	**Davis Peace and Diplomacy Initiative Fellowship**
2007	**NELA Center for Student Success Scholarship**
2007	**Juan Young Trust West Scholarship**
2006	**Psi Chi International Honor Society in Psychology**

CLINICAL EXPERIENCE

07/2023 – Present *Psychology Doctoral Intern*
VA Greater Los Angeles Healthcare System (GLA)
Los Angeles Ambulatory Care Center, Los Angeles, CA

- **Substance Use Disorder (SUD) Clinic** (6-month rotation) 08/2023 – 01/2024
    - Provide comprehensive Mental Health Initial Assessments (MHIA), consultations, and diagnostic evaluations for Veterans with substance use
    - Provide individual therapy using EFT, ACT, and CBT protocols for SUD
    - Provide group therapy: co-facilitate (1) an Intensive Outpatient Program (IOP) for SUD using the Matrix model, and (2) ACT for Recovery
    - Provide care coordination for Veterans enrolled in the IOP program
    - Present intakes during case conferences, attend team consultations and huddles with other interdisciplinary providers, present cases in weekly individual and group supervision

    Supervisor: Jesse Barglow, Ph.D.

- **Behavioral Health Interdisciplinary Program (BHIP)** (6-month rotation) 08/2023 – 01/2024
    - Provide comprehensive MHIAs. and treatment planning

- Provide consultation on diagnostic evaluations for diverse and underserved Veteran populations in downtown and East Los Angeles
- Provide individual therapy using CPT, EFT, ACT, CBT and DBT-informed life skills
- Provide group therapy: co-facilitate (1) CBT-G for Veterans with PTSD and (2) Interpersonal Issues (process group) for Veterans with a diverse range of clinical indications
- Present intakes during case conferences, attend team consultations and huddles with other interdisciplinary providers, present cases in weekly individual and group supervision

Supervisor(s): Kimberly Newsom, Ph.D., & Ayli Carrero Pinedo, Ph.D.

- **Women's Mental Health Program (WMHP)** (6-month rotation) 02/2024 – 07/2024
  - Provide comprehensive MHIAs, treatment planning, diagnostic and treatment evaluations for female and gender diverse adult Veterans
  - Provide weekly individual therapy using DBT and CPT for female and gender diverse Veterans for presentations such as depression, anxiety, emotional dysregulation, PTSD, and BPD
  - Provide group therapy: co-facilitate (1) DBT skills group for female and gender diverse adult Veterans
  - Attend and present cases in weekly DBT team consultation meetings with other WMHP interdisciplinary providers

  Supervisor: Amanda Schweizer, Ph.D.

- **Psychological Rehabilitation and Recovery Center** (6-month rotation 02/2023 – 07/2024
  - Provide weekly individual therapy using CBT and DBT-informed life skills for Veterans with severe mental illness (SMI)
  - Provide group therapy: co-facilitate (1) CBT for Voices and Worries for adult Veterans with SMI , (2) Loss and Grief for Veterans with SMI, (3) Psychosomatic Healing using Dance and Movement for Veterans with SMI
  - Present cases in weekly individual and group supervision

  Supervisor: Elizabeth Romero, Psy.D.

- **Mindfulness Facilitation** (within Primary Care Mental Health Integration Clinic) (6-month elective) 02/2023 – 07/2024
    - Co-facilitate a weekly mindfulness group which provides psychoeducation on mindfulness practice and leading formal mindfulness practices for Veterans with presentations such as, depression, anxiety, PTSD, pain, tinnitus, cancer, and other health problems
    - Attend weekly group supervision and didactics on mindfulness practices

  Supervisor: Michael Karakashian, Ph.D.

09/2020 – 06/2022 ***Mental Health Provider***
New Beginnings Counseling Center (NBCC)
University of California, Santa Barbara, Santa Barbara, CA

- Conducted comprehensive intakes with adults and families, incorporating measures of emotional and psychosocial functioning, including the Outcomes Questionnaire-42, Mini Mental Status Exam, Beck Depression Inventory, and Audit-C for diverse and low-income adult clients and families
- Established treatment plans and case conceptualizations, and produced diagnostic formulations
- Provided weekly short and long-term therapy using an integrative, insight-oriented and empirically supported treatments such as, psychodynamic psychotherapy, IPT, CBT, and DBT-informed skills
- Assessed and monitored clients at risk for suicide and provided Safety Planning
- Received weekly individual and group supervision, and participated in weekly training seminars

Supervisors: Susan Wax, Ph.D. & Paul Guido, Ph.D.

09/2019 – 09/2020 ***Mental Health Provider***
Hosford Counseling & Psychological Services Clinic
University of California, Santa Barbara, Santa Barbara, CA

- Conducted comprehensive intakes with adults and families, incorporating measures of emotional and psychosocial functioning, including the Outcomes Questionnaire-42, Mini Mental Status Exam, PHQ-9, and Audit-C
- Established treatment plans and case conceptualizations, and produced diagnostic formulations
- Provided individual weekly short and long-term evidence-based interventions such as, DBT, IPT, CBT, ACT, and psychodynamic relational framework for diverse community clients and students
- Received weekly individual and group supervision

Supervisors: Steve Smith, Ph.D. & Miya Barnett, Ph.D.

09/2019 – 01/2022 ***Mental Health Provider***
Parent Child Interaction Therapy (PCIT) Clinic
University of California, Santa Barbara, Santa Barbara, CA

- Conducted comprehensive intake interviews and collected multi-informant data using standardized measures such as, Eyberg Child Behavior Inventory (ECBI), Behavior Assessment System for Children 3rd Ed (BASC-3), and behavioral observation measures including, the Dyadic Parent-Child Interaction Coding System (DPICS)
- Provided Internet-based PCIT for children with disruptive behaviors, including complex presenting psychological symptoms (oppositional defiant disorder, attention- deficit and hyperactivity disorder), and comorbidities (obsessive compulsive disorder, generalized anxiety disorder, and separation anxiety)
- Reviewed and scored weekly ECBI and DPICS assessments
- Received weekly group supervision

Supervisor: Miya Barnett, Ph.D.

09/2013 – 09/2014 ***Peer Counselor***
International House New York, New York, NY

- Provided career counseling to young adult international students
- Conducted outreach and psychoeducational workshops on mental health and well-being, mindfulness, conflict resolution, and cross-cultural communication for international students, scholars, and trainees
- Supervised 15 Resident Fellows and provided training on suicide assessments, and crisis management
- Served as the peer counselor on-call and was involved in crisis management and inpatient admissions

Supervisor: Sonia Patel, LCSW

ASSESSMENT EXPERIENCE

03/2021 – 03/2023 ***Assessment Clinician***
Mind & Behavior Assessment Clinic (MBAC)
University of California, Santa Barbara, Santa Barbara, CA

- Administer cognitive and diagnostic neuropsychological, and personality assessment batteries to adults using structured and semi-structured techniques

- Participate in team case formulation combining and synthesizing results from interviews, medical records, developmental history, cognitive, social-communication, and other symptoms measures
- Score and aggregate testing results into comprehensive integrated psychological and neuropsychological reports
- Write integrative reports combining and synthesizing results of semi-structured clinical interviews, medical records, and standardized assessments
- Provide feedback to clients regarding results of their evaluation and make treatment recommendations for appropriate care

Supervisor: Miriam Thompson, Ph.D.

08/2021 – 08/2022 ***Assessment Clinician***
Koegel Autism Center
University of California, Santa Barbara, Santa Barbara, CA

- Administer cognitive and diagnostic neuropsychological, and personality assessment batteries to children, adolescents, and adults using structured and semi-structured techniques to evaluate psychiatric and developmental disorders
- Participate in team case formulation, combining and synthesizing results from interviews, medical records, developmental history, cognitive, social-communication, and other symptoms measures
- Score and aggregate testing results into comprehensive integrated psychological and neuropsychological reports
- Write integrative reports combining and synthesizing results of semi-structured clinical interviews, medical records, and standardized assessments
- Provide feedback to clients regarding results of their evaluation and make treatment recommendations for appropriate care

Supervisors: Anna Krasno, Ph.D. & Ty Vernon, Ph.D.

RESEARCH EXPERIENCE

09/2018 – Present ***Graduate Student Researcher***
University of California, Santa Barbara, Santa Barbara, CA
Trauma Adversity Resiliency and Prevention Lab (TARP)
PI: Sepideh M. Alavi, M.A., Maryam Kia-Keating, Ph.D.

Dissertation Research
Project: Addressing Burnout in Healthcare: Understanding Barriers and Facilitators to Health Promotion and Implementing a Wellness Programming for Resident Physicians

- Project Description: This project strives to address secondary trauma, compassion fatigue, and burnout in first responders, health and mental health care providers, and examines the implementation of a peer-support training program for individuals in the helping professions including, residents physicians.

Project: Multidisciplinary Research on COVID-19 Examining the Mental Health of Frontline Health Care Providers

- Applied and received the Multidisciplinary Research on COVID-19 Grant to examine the mental health of frontline health care providers responding to COVID-19 patients, during the acute phase of the pandemic
- Wrote Institutional Review Board (IRB) protocol, and corresponded with the IRB regarding outreach materials, case report forms, and study amendments
- Conducted, coded, and analyzed qualitative interviews using thematic analysis

Project: Thriving Organizations Thriving Staff (TOTS)

- Manage research aspects of a community-based participatory research examining compassion fatigue, secondary trauma, and burnout in healthcare, education, public health, and the non-profit sector
- Wrote Institutional Review Board (IRB) protocol, and corresponded with the IRB regarding outreach materials, case report forms, and study amendments
- Develop pre and post assessment surveys on Qualtrics

Project: Proyecto HEROES

- Co-coordinate an National Institute of Child and Human Development (NICHD) funded study examining health disparities in Latinx populations affected by intergenerational trauma and community-based violence
- Provide mentorship and supervision to undergraduate research assistants

Project: Cottage Health Disaster Response and Clinician Well-Being

- Manage research aspects of a mixed-methods, community-based study titled
- Create codebook and conduct data-analysis using NviVo and SPSS

03/2015 – 06/2018 ***Research Health Science Specialist***
Veterans Affairs Portland Health Care System, Portland, OR

Local Site PIs & Supervisor: Drs. Erick Turner, M.D., Brandan Cornejo, M.D., Joel Mack, M.D. & Tawni Kenworthy-Heinige, B.S.

- Project manager of a national VA clinical trial titled: *Lithium for the Prevention of Recurrent Suicide Attempts in participants with Major Depressive Disorder (MDD) or Bipolar Disorder*
- Administered psychodiagnostics and neuropsychological evaluations: semi-structured clinical interviews including, Structured Clinical Interview for DSM-5 (SCID-5), Mini International Neuropsychiatric Interview (MINI), Columbia Suicide Severity Scale (C-SSRS), and Post Traumatic Stress Disorder Checklist for DSM-5 (PCL-5) during screening and follow-up research visits
- Provided risk assessments and crisis management: assessed suicide risk, administered *Safety Plan Intervention to Reduce Suicide Risk: Veteran Version*, and collaborated with the Suicide Prevention Department
- Wrote Suicide Behavior Reports for the national Suicide Prevention Application Network database which captures data related to suicidal ideation and behaviors of Veterans registered within the Veterans Health Administration
- Engaged in ongoing consultation/liaison and triage with mental health and primary care providers
- Observed PTSD Symptoms Management and Wise Warriors groups lead by psychology interns, senior staff psychologists, and suicide prevention coordinators

09/2013 – 09/2014 ***Assistant Research Scientist***
New York State Psychiatric Institute/ Columbia University Irving Medical Center/ Pediatric Anxiety & Mood Research Clinic, New York, NY
PIs: Moira Rynn, M.D., Laura Mufson, Ph.D., & Pablo Goldberg, M.D.

- Managed research aspects for multiple National Institute of Mental Health (NIMH) and industry funded studies on Obsessive Compulsive Disorder, MDD and Bipolar Disorder
- Administered clinical assessments such as, C-SSRS, Wechsler Abbreviated Scale of Intelligence (WASI), Wide Range Assessment of Memory and Learning (WRAML-2), and the Children's Yale Brown Obsessive-Compulsive Scale (CY-BOCS) to determine study eligibility and evaluate symptoms throughout the trials
- Wrote IRB memorandums, produced annual reports for NIMH, and NICHD grant renewals

- Drafted new protocols and Informed Consent forms for upcoming studies

09/2011 – 09/2013 ***Graduate Research Assistant***
Global Mental Health Lab, Columbia University, New York, NY
PI: Lena Verdeli, Ph.D.

- Participated in weekly clinical supervisions with a team of community health workers and mental health professionals to assess feasibility of IPT-G for the Haitian population impacted by natural disasters, and evaluate capacity building through task-shifting approaches
- Conducted literature reviews on the impact of psychological distress among mothers in rural sub-Saharan Africa on child health outcomes
- Assisted with drafting World Health Organization (WHO) and Global Centers grant proposals examining refugee mental health in Jordan

09/2011 – 09/2013 ***Graduate Research Assistant***
Loss, Trauma and Emotion Lab, Columbia University, New York, NY
PI: George Bonanno, Ph.D.

- Recruited participants for a study titled: *Project to Understand Reactions to Loss II (PURL II)* by searching obituaries and identifying potential research participants who had recently lost a significant other
- Coded videotaped interviews of participants using Facial Action Coding System (FACS) analysis (Ekman et al., 2002) to examine the association of positive expressive states with grief outcomes in reactions to loss. Coded approximately over 150 hours of videos
- Audited and conducted inter-rater reliability measures to evaluate homogeneity and data integrity

PUBLICATIONS

Alavi, S. M., Kia-Keating, M., & Nerenberg, C. (2023). Secondary traumatic stress and burnout in health care providers: A post-disaster study. *Traumatology*. https://doi.org/10.1037/trm0000418

Alavi, S. M., Maryam Kia-Keating, Isaac Bouchard. (In preparation). *Mitigating Chronic Stress and Burnout and Promoting Wellness in Resident Physicians and for Healthcare Systems. Traumatology*.

Alavi, S. M., Maryam Kia-Keating, Isaac Bouchard, Miguel Arana. (In preparation). *Secondary Traumatic Stress and Burnout in Community-Serving Organizations Responding to BIPOC and Gender Diverse Communities*. *Psychological Services*.

Alavi, S. M., & Maryam Kia-Keating (In preparation). *Barriers and Facilitators to Help-Seeking Behaviors Among Resident Physicians.*. *Psychological Services*.

CONFERENCE PRESENTATIONS

Alavi, S. M., Maryam Kia-Keating, Isaac Bouchard, Miguel Arana. (2023, November). *Secondary Traumatic Stress and Burnout in Community-Serving Organizations Responding to BIPOC and Gender Diverse Communities*. Poster presented at the International Society for Traumatic Stress Studies 39th Annual Meeting, Los Angeles, CA.

Alavi, S. M., Maryam Kia-Keating, Isaac Bouchard. (2023, November). *Mitigating Chronic Stress and Burnout and Promoting Wellness in Resident Physicians and for Healthcare Systems.* Poster presented at the International Society for Traumatic Stress Studies 39th Annual Meeting, Los Angeles, CA.

Alavi, S. M. & Maryam Kia-Keating (2022, November). *"We didn't know what we were up against": COVID-19 response and frontline health care providers' mental health*. Poster to be presented at the Association for Behavioral Cognitive Therapy 56th Annual Convention New York, NY.

Alavi, S. M., Kia-Keating, M., Nerengberg, C. (2022, February). *Organizational factors related to secondary traumatic stress and burnout in health care providers following disaster*. Paper presented at Community Research and Action in West (CRA-W), Virtual.

Alavi, S. M. & Maryam Kia-Keating (2021, August). *Fear, moral injury, and isolation among frontline health care providers during the COVID-19 pandemic*. Poster presented at the American Psychological Association, San Diego, CA.

Alavi, S. M. (2020, November). *Psychosocial impact of natural disasters on health care providers providing frontline care.* Second Year Project presented at UCSB's Research Festival, Santa Barbara, CA.

Alavi, S. M. & Maryam Kia-Keating (2020, October). *A global pandemic: health care providers and their families at the frontline of COVID-19.* Presented at the Multidisciplinary Research on COVID-19 & Its Impacts Conference at UCSB, Santa Barbara, CA.

Alavi, S. M., Maryam Kia-Keating, Sabrina R. Liu, Ida Taghavi, Ginette Sims, Suzanne Rouppet. (2019, November). *Secondary trauma and organizational factors for*

medical providers following disaster. Poster presented at the International Society for Traumatic Stress Studies 34th Annual Meeting, Boston, MA.

Turner, E. H., **Alavi, S. M.,** Cipriani, A. C., Furukawa, T., Ivlev, I., McKenna, & R., Ogawa, Y. (2017, September). *Update on reporting bias in the antidepressant literature: An FDA-controlled examination of drug efficacy*. Poster presented at the International Congress on Peer Review and Scientific Publication, Chicago, IL.

Alavi, S. M., Sonmez, C., & Kaighobadi, F. (2013, August). *Violence against sexual minorities: consequences and implications for human rights*. Poster presented at the American Psychological Association, Honolulu, HI.

Alavi, S. M. (2013, March). *LGBT mental health in developing countries.* Presented at the Committee on The Family NGO at the United Nations, New York, NY.

Alavi, S. M. (2013, April). *The impact of immigration on Iranian minorities.* Presented at the Committee on The Family NGO at the United Nations, New York, NY.

Herting, M. M., **Alavi, S. M.,** Sasse, S., Cservenka, A., Mills, K. A., Fair, D. A., & Nagel, B. J. (2011, April). *The hippocampus continues to integrate with the default network between early and mid-adolescence*. Poster presented at the Society for Neuroscience, McMinnville, OR.

TEACHING EXPERIENCE

University of California, Santa Barbara, Santa Barbara, CA

Summer 2020, 2022	***INT W 20: Intro to Research University***
	Course Instructor
Spring 2021	***CNCSP 112: Psychology of Gender***
	Graduate Teaching Assistant
Winter 2020, 2021, 2022	***BLST14: History of Jazz***
	Graduate Teaching Assistant
Summer 2020	***INT W 20: Intro to Research University***
	Graduate Teaching Assistant
Summer 2020, 2022, Spring 2022, 2023	***CNCSP 102: Research in Applied Psychology***
	Graduate Teaching Assistant
Spring 2020, 2022, 2023	***CNCSP 101: Intro to Helping Relationships***

Graduate Teaching Assistant

Portland State University, Portland, OR

Spring 2010 **Principal Behavior Analysis**
Undergraduate Teaching Assistant

OTHER RELATED EXPERIENCE

09/2012 – 09/2013 **APA *Intern Ambassador at the* United Nations (UN)**
United Nations, New York, NY
NGOs: Family Committee & Committee on Global Mental Health

- Worked with APA UN representatives accredited to the United Nations Economic and Social Council (ECOSOC) and to the Department of Public Information (DPI) to help implement APA's mission of promoting psychology as a science and profession that is relevant to the UN's global agenda, such as the development and sustainability of the Millennium Villages Project
- Assisted the Family Committee NGO with program development and community outreach, in order to engage additional NGOs in research, and view mental health disparities from a social justice lens
- Assisted with organization and program development of United Nation's 1st Annual Psychology Day conference held in New York City

PROFESSIONAL CERTIFICATIONS & TRAINING

April 2021	Psychological First Aid Training (PFA)
March 2017	Applied Suicide Intervention Skills Training (ASIST)
March 2015	Operation S.A.V.E: VA Suicide Prevention Gatekeeper Training
September 2013	Good Clinical Practice (GCP) certified
February 2012	Facial Action Coding System (FACS) certified

PROFESSIONAL MEMBERSHIPS & AFFILIATIONS

Member	International Society for Traumatic Stress Studies (ISTSS)
Member	Association for Research in Personality (ARP)
Student Affiliate	American Psychological Association (APA)
Student Affiliate	Association for Behavioral Cognitive Therapy (ABCT)

UNIVERSITY & PUBLIC SERVICE TO THE COMMUNITY

03/2022 – Current	Provide consultation and workshops on cultivating a culturally-responsive and trauma-informed organization for staff working at community-serving organizations and healthcare systems (have reached over 130 attendees)
09/2018 – Current	Provide mentorship to first generation and undocumented undergraduate and graduate students at UCSB
09/2018 – Current	Provide research mentorship and supervision to undergraduate research assistants interested in pursuing careers in psychological science and mental health professions
Spring 2023	Guest lecturer for an undergraduate research methods course at UCSB. Presented on *"Cultural Considerations and Diversity Factors in Applied Psychology Research"*
Spring 2023	Guest lecturer for an undergraduate counseling course at UCSB. Presented on *"DBT Foundations and Life Skill for Suicidal Patients"*
Fall 2019 – Spring 2020	Conducted outreach and psychoeducational workshops on stress management, resilience, and well-being for international students at UCSB

LANGUAGES

Farsi, fluent speaking, reading, and writing proficiency

ABSTRACT

Addressing Burnout in Healthcare: Understanding Barriers and Facilitators to Health Promotion and Implementing a Wellness Programming for Resident Physicians

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Counseling, Clinical, and School Psychology

by

Sepideh M. Alavi

Organizational burnout is an occupational hazard affecting healthcare professionals (Gómez-Urquixa et al., 2016) who often respond to collective trauma. With over three decades of research into the causes of burnout, as well as prevention and intervention efforts, this phenomenon remains a significant problem in healthcare. This issue not only affects healthcare providers and patients, but also organizations that remain ill-equipped to address burnout (Carrau & Janis, 2021). Current projections anticipate a national shortage of up to 122,000 physicians by 2032, with shortfalls in both primary care physicians and specialists (Ahmed & Carmody, 2020). Research has shown that medical students, residents, fellows, and early career physicians are at even greater risk for developing burnout (Lasalvia et al.,

2021). For example, resident physicians' risk of burnout increased by nearly 2.5 times (Lasalvia et al., 2021). The current community-based participatory research (CBPR) study led to the design and pilot test of a wellness program to reduce burnout and address Secondary Traumatic Stress (STS) within healthcare systems (Israel et al., 2019). Aligned with the premise of CBPR, a long-term community-academic partnership identified key community priorities that formed and developed the current study. First, key stakeholders working in healthcare were interviewed to provide an in-depth understanding of the organizational and provider needs related to burnout and STS. In collaboration with our community partner, we developed and piloted a wellness program. Data was collected and analyzed through Rapid Assessment Procedure Informed Clinical Ethnography (RAPICE), which includes participant observations, field notes, and in-depth interviews conducted with four resident physicians (Palinkas & Zatzick, 2018). The present analysis yielded six key themes related to pandemic stress and its consequences and four themes that highlighted the nuanced challenges related to mental health and wellness. The themes related to the unforeseen challenges of working as a frontline healthcare provider/ emergency response during COVID-19 were: (1) unique chronic stressors related to COVID-19, (2) healthcare providers' experiences of STS and burnout during COVID-19, (3) sense of isolation among healthcare providers responding to COVID-19, (4) lack of opportunities for debrief and process during COVID-19, (5) organizational attitudes related to mental health and wellness, and (6) lack of national recognition of healthcare providers responding to COVID-19. The themes related to mental health and wellness were: (1) internalized stigma related to mental health, (2) time constraints, (3) pressure to perform and perfectionistic tendencies, and (4) supportive leadership. Participants also discussed how they experienced the peer-support

program, and provided specific recommendations on implementing a culture of health and wellness in organizations and ways healthcare systems can be trauma-informed. Implications for public policy and institutional strategies to address burnout and promote wellness among resident physicians are discussed.

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CHAPTER ONE: INTRODUCTION

Occupational burnout has become a national epidemic in the U.S. (Gómez-Urquixa et al., 2016), particularly in the healthcare professions. Although burnout can occur in any kind of profession, healthcare professionals in-training and early in their careers are at particular risk for developing burnout (de Hert, 2020). This may have significant negative personal effects, such as substance abuse (Mohanty et al., 2019), stress, anxiety, depressive symptoms, insomnia (Spoorthy et al., 2020), and even suicide (Awan et al., 2022). Further, physician burnout in particular can have important professional consequences, such as lower patient satisfaction (Yates, 2020), impaired quality of care (e.g., medical errors) (Shanafelt et al., 2010; Shanafelt & Noseworthy, 2017), and even malpractice suits with substantial costs for caregivers and healthcare systems (Avraham & Schanzenbach, 2017; Jones et al., 1988). A meta-analysis found statistically significant negative relationships between provider burnout and patient quality of care and safety (Salyers et al., 2017). This relationship can pose significant costs to healthcare systems (Salyers et al., 2017) and has considerable implications in healthcare delivery. Aside from individual impact and professional consequences, burnout encumbers overall organizational functioning, including decreased productivity in physicians (Dewa et al., 2014), excessive absences and tardiness (Salyers et al., 2017), and reduced overall job performance (West et al., 2018). Among physicians, surgeons with burnout tend to physically withdraw from work through frequent absence or tardiness (Hirayama & Fernando, 2016).

Burnout can also be costly for organizations as the cost of turnover, attrition, recruitment, and onboarding tends to exceed annual salaries (Hart et al., 2014). It is estimated that burnout-related turnover can cost up to $14 billion annually for healthcare systems (e.g.,

medical centers, hospitals, clinics, urgent care) in the U.S. (Pifer, 2019). It is also estimated that $500,000 to $1 million in revenue is lost when a physician leaves a practice (Fred & Scheid, 2018). Hence, there is also business rationale to institutional investment in reducing burnout, as increased productivity, decreased turnover, and fewer malpractice suits ultimately lowers costs (Shanafelt & Noseworthy, 2017; Sharp & Burkart, 2017). However, with over three decades of research about the causes of burnout, as well as prevention and intervention efforts, this phenomenon remains a significant problem in medicine that not only affects physicians and patients, but also the organizations and institutions that remain ill-equipped to address it (Carrau & Janis, 2021).

Since the beginning of COVID-19, burnout in the healthcare profession has further exasperated and strained organizations (Leo et al., 2021). Due to the nature of their work during the pandemic, healthcare workers (HCW), including nurses, emergency department staff, and physicians, are among the groups who are most vulnerable to stressful events that can trigger a suicidal crisis (Vizheh et al., 2020). These individuals are already at risk for mental health issues, such as post-traumatic stress disorder (PTSD), which are common among emergency room residents, intensivists (i.e., critical care physicians), and surgeons (DeLucia et al., 2019). A cross-sectional study among 1961 HCW (e.g., physicians, nurses, and others involved in patient care) in Italy who were working during the peak of the pandemic found that 38.3% displayed emotional exhaustion, 26.5% displayed cynicism, and 26.5% displayed low personal achievement (Lasalvia et al., 2021). Further, burnout was reported frequent among staff working in intensive care units, medical residents, and nurses (Lasalvia et al., 2021). Importantly, factors such as career level (e.g., trainees, medical students, residents, fellows, early career physicians) impacted individual experiences of

burnout (Lasalvia et al., 2021). For example, being a resident increased the risk of burnout by nearly 2.5 times (Lasalvia et al., 2021). Coping with the COVID-19 pandemic has exacerbated these existing challenges and has placed extra strains on the well-being of HCWs. Inevitably, the COVID-19 pandemic is bound to have a negative impact on the mental health of healthcare personnel with long-term consequences (Awan et al., 2022).

The overarching goal of the current study is to gain knowledge about the barriers and facilitators of implementing a wellness program aimed at addressing and preventing burnout in physicians. It is critical to elucidate what a supportive workplace environment looks like for trainees, resident physicians, fellows, and early career physicians given that this population is considered to be among the most vulnerable among healthcare providers. Through the Rapid Assessment Procedure Informed Clinical Ethnography (RAPICE), the current study seeks to understand the implementation of the Thriving Organizations Thriving Staff (TOTS) wellness program among resident physicians working at a healthcare system. Furthermore, this study seeks to understand organizational challenges in addressing burnout, and facilitators of health promotion in the healthcare systems from the perspective of key-informants and resident physicians. Lastly, the current study aims to understand the essence of health promotion and how organizations can strive towards becoming trauma-informed and create a culture of health for trainees, including residents and fellows.

Literature Review

Burnout in Healthcare Professionals

The rates of physician burnout, depression, and suicide have been on the rise over the past 50 years (Kingston, 2020). A systematic review found that burnout scores for emotional exhaustion ranged from 31% to 54.3%, depersonalization ranged from 17.4% to 44.5%, and

low personal accomplishment ranged from 6% to 39.6% among physicians in the United Kingdom (Imo, 2017). The prevalence of burnout is greatest in resident and fellow trainees (60%) compared with medical students and early career physicians (55 vs. 51%, respectively) (Drybye et al., 2014; Sharp & Burkart, 2017). Physician burnout contributes to alcohol and substance abuse, career dissatisfaction, depression, and even suicide (Oreskovich et al., 2012; Shanafelt et al., 2011). Although the lifetime rate of depression for physicians is similar to that of the general population, the rate of suicide is disproportionately higher, ranging from 1.1 to 3.4 times the rate of the general population in male physicians and 2.5 to 5.7 times in female physicians (Rothenberger, 2017). Six to 8% of medical students and residents report suicidal ideations (Schwenk et al., 2010; Sharp & Burkart, 2017) and a staggering 300–400 physicians are lost to suicide annually (Sharp & Burkart, 2017). A recent study from a Malaysian sample of healthcare providers, including physicians, residents, and medical students involved in patient care during COVID-19 show that the proportion of providers with current suicidal ideation and clinical depression were 11.1 and 9.9%, respectively (Sahimi et al., 2021). Further, a case study found a total of 26 worldwide COVID-19 related suicide cases among a range of healthcare providers, nurses, paramedics, physicians, and a medical student caring for patients (Jahan et al., 2021). Hence, physician suicide has remained a silent epidemic for decades despite increased knowledge about preventing burnout and secondary trauma (Kingston, 2020).

History and Conceptualization of Burnout

Burnout was first described by Freudenberger (1974) as a psychological condition involving a prolonged response to enduring interpersonal stressors in professionals working in human-services, as well as caregiving occupations (Leiter & Maslach, 2009; WHO,

2018). The concept of burnout was further developed (Maslach & Jackson, 1981) to be characterized by three domains: (1) Emotional exhaustion, known as feelings of energy depletion, being "worn out," debilitation, or exhaustion as a result of long-term involvement in emotionally taxing situations. (2) Cynicism (originally called depersonalization), known as an increased sense of mental distance, feelings of negativity towards one's job, inappropriate attitudes toward patients, and becoming irritable and withdrawn while simultaneously losing idealism. (3) Professional inefficacy (the feeling of not doing tasks adequately and being incompetent at work). A diminished sense of professional efficacy or personal accomplishment at work is characterized by reduced productivity or capability, low morale, and an inability to cope with workplace related stress (Maslach & Jackson, 1981). The interplay of the aforementioned three domains distinguishes burnout from stress and other psychological conditions with similar symptoms, such as depression and fatigue (Awa et al., 2010). Studies have demonstrated that burnout is often related to physical health problems, including insomnia, headaches, and poor overall health, as well as psychological problems such as depression, anxiety, substance abuse, relationship problems, and reduced job satisfaction (Khamisa et al., 2013; Kousloglou et al., 2014).

Theoretical Framework

Psychological theories and constructs stemming from an individualistic framework have been the basis for defining burnout, developing hypotheses about its causes and effects, and proposing responses to it (Maslach, 2017). Since burnout has been defined primarily in terms of a person's individual experience (i.e., exhaustion, cynicism, and inefficacy), research on burnout has tended to frame the search for solutions in terms of *what could be done to help the individual* (Maslach, 2017). Thus, it is often presumed that the source of

burnout lies within the individual employee, rather than in the workplace, structures, and systems that interact with the individual (Maslach, 2017). Nonetheless, if burnout had originally been defined in terms of an occupational hazard, then perhaps the search for solutions would be framed in terms of *what could be done to improve job safety*, rather than improving the individual's self-care practices (Maslach, 2017). Hence, it is often presumed that it is the responsibility of the individual, rather than their organization, to remediate the problem (Maslach, 2017).

Areas of Worklife Model (AW)

A conceptual framework that has emerged from burnout research is the AW model, which brings together both person and job context factors in an integrated way (Leiter & Maslach, 2004). According to the AW model, the six positive fit factors that promote engagement and well-being can be defined as: (a) a sustainable workload; (b) choice and control; (c) recognition and reward; (d) a supportive work community; (e) fairness, respect, and social justice; and (f) clear values and meaningful work (Leiter & Maslach, 2004; Maslach & Leiter, 2017). The AW model frames the question as, "How does burnout result from the interaction of the person *and* the job?", instead of wondering, "Is it the person *or* the job?" that has led to burnout (Maslach, & Leiter, 2017). The AW model provides a framework for defining a healthy workplace in which employees can thrive and succeed. The AW model is best understood in terms of the satisfaction of core psychological needs such as autonomy, belongingness, competence, psychosocial safety, positive emotions, fairness, and meaning. All of these needs have been empirically linked to intrinsic work motivation and well-being (Maslach & Banks, 2017). Thus, the literature suggests that the challenge will be

to determine how to design and modify workplaces in ways that will support the satisfaction of these needs through the performance of the job (Maslach & Banks, 2017).

Barriers in Help Seeking Behaviors in Healthcare Providers

Overemphasis on Individual Versus Organizational Approaches to Burnout

Psychological interventions emphasizing individual change has been predominately focused on fixing the individual, rather than fostering a workplace environment where staff could thrive (Maslach & Leiter, 2016). Importantly, individual mental health interventions for burnout are often perceived as blaming the individual who receive the intervention (Maslach, 2017). For example, when staff are advised to take better care of themselves, it is often implicitly (if not explicitly) conveyed that the experience of burnout is the consequence of the employee not taking better care of themselves or using effective coping skills. Therefore, even interventions that have the best of intentions (such as promoting worker's health) can be viewed as patronizing and demeaning because of the message of blame (Maslach, 2017). Maslach (2017) argues that this message of blame is a barrier in help-seeking behaviors and may be one reason why there tends to be a lack of full employee participation in various company-sponsored trainings to promote health and well-being. Some participants in these trainings reported that the advice they were given did not address organizational problems that were causing their burnout (Maslach, 2017).

Stigma and Fear of Professional Consequences

Burnout is perceived to be stigmatized as a sign of weakness, incompetence, or even mental illness. This is the perception in many workplace environments, but especially in the healthcare sector. A mixed-methods study investigating what prevented a sample of 274 Australian physicians from seeking help for burnout found that time constraints, stigma, fear

of professional consequences, lack of access to services, and professional culture were consistently reported as barriers by those seeking treatment (Clough et al., 2019). Specifically, aspects of perceived structural stigma (that the individual would be disadvantaged or discriminated against in their profession or workplace), perceived stigma from others (that others would think less of them), and self-stigma (e.g., that a healthcare provider should be able to cope without the help of others) were found as barriers to physicians seeking treatment (Clough et al., 2019). Consequently, healthcare providers, particularly those early in their careers, such as medical students, residents, and fellows can be reluctant to disclose that they are struggling with workplace demands or other factors that contribute to burnout. They may even conceal their feelings and project an outward appearance of being fine (Maslach, 2017). The result can be one of pluralistic ignorance in which the individual may believe that they are the only ones grappling with these problems (Maslach, 2017).

Further studies have indicated that physicians are likely to suffer in silence due to the perceived stigma associated with experiencing workplace "stress" and "mental illness," as well as the fear of getting their medical licenses revoked (Mehta et al., 2018). Specifically, according to a metanalysis consisting of 1023 physicians including residents, the fear of a loss of confidentiality, impediments to career progression, losing one's medical license, and job loss compound barriers to help seeking behaviors (Petrie et al., 2019). Further discouragement in speaking up against burnout include resource gaps, such as time constraints and a lack of specialized trauma-informed treatments for physicians (Petrie et al., 2019). In another study examining barriers to help seeking among 155 resident physicians, it was found that residents' perceived stigma and concerns about jeopardizing training status

were influential factors in seeking help and avoiding care at their institution (Moutier et al., 2014). The stigma associated with mental health issues has inward-facing impacts on health professionals' willingness to seek help or disclose a mental health problem, which can result in an over-reliance on self-treatment, low peer support (including ostracization and judgment from co-workers if disclosure does occur), and increased risk of suicide (Knaak et al., 2017).

Interventions Aimed at Reducing Burnout

Given the costly effects of burnout, a substantial amount of research has been conducted to explore how burnout can be mitigated from both an individual-driven framework and organizational-based approach in healthcare professionals (Carrau & Janis, 2021). There are two main types of burnout interventions: (1) interventions designed to help the individual to cope with workplace stressors, and (2) interventions focused on changing the organizational factors that triggered burnout in the first place (Maricuţoiu et al., 2014). Individual-level interventions start from the assumption that burnout is the result of poor individual adaptation to a workplace environment that is difficult to change (Maslach et al., 2001). On the other hand, organizational-level interventions are aimed at reducing the effect of organizational stressors through organizational change (e.g., restricting duty hours, adjusting workload demands, flexibility with Personal Time-Off). Organizational-level interventions are scarce compared to individual-level interventions in both practice and research (Maricuţoiu et al., 2014).

A meta-analysis by West et al. (2016) examined the effectiveness of individual-focused strategies and organization-based approaches in preventing burnout among 2914 physicians including residents. Results demonstrated that both individual and organizational approaches decreased overall burnout from 54% to 44% (West et al., 2016). Specifically, the

average emotional exhaustion score for participants decreased from 23.82 points to 21.17 points (2.65 points difference), and the average depersonalization score decreased from 9.05 to 8.41 (0.64 points difference). However, this study did not examine participants' reduced sense of personal achievement. Effective individual-focused strategies include mindfulness-based approaches, stress management training, and small group curricula (West et al., 2016). Effective organizational approaches include work hour restrictions (i.e., hours spent on activities that are required by the accreditation standards) and locally developed modifications to clinical work processes (West et al., 2016). Although this study demonstrated the effectiveness of both individual- and organization-based approaches in reducing burnout among physicians, the percent decrease remains low at only 10% reduction for the two dimensions of burnout (i.e., emotional exhaustion and cynicism). Additionally, it remains unknown how individual and organizational solutions might be combined to deliver greater improvements in physician well-being than those achieved solely with individual solutions.

A systematic review by Busireddy et al. (2017) examined the efficacy of 12 interventions to reduce burnout in 2,030 resident physicians. Results demonstrated that work hour reductions were associated with a score decrease for residents reporting emotional exhaustion, a small but significant decrease in depersonalization score, and no effect on the mean personal accomplishment score. Among individual interventions, self-care workshops showed decreases in depersonalization scores and a meditation intervention reduced emotional exhaustion. Results from this study support those from prior studies (Awa et al., 2010; Marine et al., 2006). It remains unclear however which interventions are most effective, as there seems to be no gold standard intervention for preventing and mitigating

burnout in resident physicians. This is not surprising however, as each organization is confronted with unique stressors affecting its staff.

Findings from another meta-analysis by Panagioti et al. (2017) provide support for the view that burnout is a failing of the whole healthcare organization, rather than of the individuals. This study examined the effectiveness of 20 controlled interventions to reduce burnout among 1,550 physicians including residents. The interventions in this study included duty hour restriction, communication and stress management training, Balint training, BATHE stress therapy training, incentivized exercise program, overnight shifts of 24, 16, or 12 hours, protected sleep period, meditation (Respiratory One Method), self-care workshops, and support group structure (Panagioti et al., 2017). Results demonstrated that existing interventions were associated with small but significant reductions in burnout (Panagioti et al., 2017). Among interventions, self-care workshops showed decreases in depersonalization scores, and a meditation intervention reduced emotional exhaustion (Panagioti et al., 2017). Subgroup analyses suggested significant decreases in burnout as the result of organization-directed interventions (Panagioti et al., 2017). Evidence from this meta-analysis suggests that the strongest evidence for effectiveness was found for organization-directed intervention, but these interventions remain rare in practice (Panagioti et al., 2017) consistent with prior meta-analytic findings (Maricuţoiu et al., 2014).

The Impact of Burnout on Coping with Secondary Traumatic Stress (STS)

STS

STS, a term that is often used interchangeably with compassion fatigue (CF), is "the cost of caring" and defined as "the stress deriving from helping others who are suffering or who have been traumatized" (Figley, 1995, p. 7). CF is described as the convergence of STS

and cumulative burnout (CF= STS + burnout) and was originally explained as the negative impact of trauma-focused work (Figley, 1995). Figley previously used the term "compassion fatigue" to describe the symptoms of STS in healthcare professionals working with individuals impacted by trauma (Figley, 1995). STS can include symptoms such as exhaustion, hypervigilance, avoidance, intrusion, and emotional numbing (Figley, 1995). Important to note that this manuscript utilizes CF and STS interchangeably as participants who were interviewed for this study also used the term CF and STS interchangeably.

Studies have demonstrated that burnout is often observed in healthcare providers exposed to secondary trauma (Gómez-Urquiza et al., 2017). Gómez-Urquiza et al. (2017) found the prevalence of burnout-related symptoms in emergency medicine nurses often exposed to secondary trauma to be 31% for emotional fatigue, 36% for depersonalization, and 29% for low sense of personal accomplishment. A study examining burnout and STS in a sample of 253 resident physicians in New Zealand found that 17.1% of the sample appeared to be at risk for CF and 19.5% at risk of burnout (Huggard & Dixon, 2011). Results from this study are similar to those reported in studies of other health professionals and suggest a need for caution on the part of clinicians and employers in regard to the potentially emotionally demanding aspects of patient care. For example, a meta-analysis by Cieslak et al. (2014) suggested that a range of healthcare professionals including nurses, mental health providers, and forensic specialists exposed to secondary trauma are likely to report similar levels of burnout and STS, as reflected by their strong positive correlation. A study examining the relationship between burnout and STS in human service workers pointed to a directional relationship, suggesting that burnout can contribute to the development of STS in individuals working in highly demanding environments where they are exposed to work-related

secondary exposure to traumatic events (Shoji et al., 2015). Results from these studies demonstrate that burnout, if not mitigated, could trickle to other mental health sequelae, which in turn could negatively impact patient care and add additional strain to healthcare systems. Importantly, although research into the presence of culminative burnout and STS in resident physicians has received attention over the years, burnout syndrome remains a significant issue in this population (Huggard & Nimmo, 2013), suggesting opportunities for further research in this area, and particularly research focusing on gaining an understanding of its impact on patient care and organizational outcomes (Shahi et al., 2022).

Interventions Addressing STS

Currently, the most widely utilized interventions in healthcare systems to address STS in healthcare providers following potentially traumatic events include psychological debriefing (PD), such as the Critical Incident Stress Debriefing (CISD), and the Resilience and Coping for Health Care Providers (RCHC) intervention (Bercier & Maynard, 2015; Haugen et al., 2012) and Psychological First Aid (PFA) (Kameno et al., 2021). PD was originally developed to prevent long-term distress or post-traumatic stress symptoms in healthcare providers (Devilly et al., 2006) and is generally conducted after exposure to a traumatic event, focusing on ventilation, psychoeducation, and the normalization of distress symptoms (Bercier & Maynard, 2015). Although PD has been widely studied and disseminated for healthcare staff, including resident physicians working in hospital emergency departments, prior research has yielded neutral, negative, or mixed results on its effectiveness (Bercier & Maynard, 2015; Sandhu et al., 2014). For example, a longitudinal study evaluating the impact of CISD among responders and healthcare providers, including physicians involved in a critical incident, found that CISD did not appear to affect the

severity of stress symptoms six months following the incident, whereas those with pre-existing stress management strategies reported less severe symptoms at six months (Macnab et al., 2012).

Further, RCHC psychoeducational intervention provides education on and strategies for understanding acute, chronic, and post-traumatic stress, coping, and resiliency tailored for the needs of the helping professions. Through the use of individual and collective processing, healthcare providers participating in RCHC develop both individual and collective coping plans. Considering the short and long-term impact of disasters on essential healthcare workforce, interventions such as RCHC provide benefits, including retention and well-being of providers (Yuma et al., 2019). Additionally, while a program such as RCHC is primarily intended to build protective factors through psychoeducational strategies (i.e., Powell & Yuma-Guerrero, 2016), it may not adequately address healthcare providers' acute reactions to trauma (Yuma et al., 2019). Further, RCHC programs are relatively new psychological interventions that have shown promising outcomes with frontline providers and appear to be potentially suitable interventions for rapid implementation (Hooper et al., 2021). Therefore, evidence for RCHC programs is limited to a single study without a control condition, thus further evaluation of these programs is required in order to strengthen their evidence base, and also to determine its effectiveness for resident physicians (Hooper et al., 2021). In sum, despite the scarcity of clinical trials and systematic reviews analyzing the effect of PD, the current evidence is consistent in not endorsing it as a form of treatment or prevention of post-and-secondary traumatic stress.

Further, PFA is another approach to help those affected by an emergency, disaster, or other adverse events (Kameno et al., 2021). It is also utilized in healthcare systems to prepare

healthcare providers including physicians with the immediate aftermath of an adverse event. PFA training is an evidence-informed approach designed to prevent and reduce the initial distress caused by adverse events, and facilitates short- and long-term adaptive functioning and coping (Dieltjens et al., 2014). While PFA primarily functions as a tool to educate disaster responders on how to better meet the needs of the affected community, there is limited evidence regarding its efficacy and implementation, with preliminary pilot work suggesting some potential benefits (Kameno et al., 2021). Further, Research demonstrates that PFA training significantly improves knowledge of appropriate psychosocial response and PFA skills in supporting people in acute distress, thereby enhancing self-efficacy and promoting resilience (Schoultz et al., 2022). However, a systematic review highlights inadequate guidance on how PFA training should be applied, adapted, and delivered, the limited evaluation of the training, and the lack of clear training outcomes (Schoultz et al., 2022).

During COVID-19, a randomized controlled trial of PFA was conducted with healthcare providers working at the frontlines of patient care (Asaoka et al., 2021). This study aimed to compare the longitudinal changes in psychological distress of a group with PFA experience and a group without PFA experience. The subjects of the study included physicians, nurses and other healthcare professionals who were tracked from before COVID-19 to during the pandemic. The baseline survey was conducted in January 2020 (T1), where 398 healthcare providers participated. The respondents in T1 were invited to participate in March (T2) and November 2020 (T3). This study showed that psychological distress among healthcare providers during the COVID-19 pandemic was significantly greater in the group without PFA experience than in the group with PFA experience; however, these results were

not consistent among physicians (Asaoka et al., 2021). Results from this study warrant an interventional study to show reliable results of the effectiveness of PFA training on mental health for different occupations of healthcare professionals including physicians (Asaoka et al., 2021).

Organizational Factors Mitigating Concurrent Burnout and STS

According to a meta-analysis by Umeda et al. (2020), organizational practices can mitigate the co-occurrence of burnout and STS by creating time and opportunities for self-care and by controlling workload demands. For example, organizations that promote balanced work cultures that reinforce time off as a form of self-care allow providers to recover from physical and psychological fatigue. In particular, taking time off in the aftermath of a disaster response can create a much-needed transition between *disaster-response mode* and *routine mode*, which can support provider well-being and improve patient care (Umeda et al., 2020). Further, Thormar et al. (2013) recommend that organizations minimize providers' exposure to disaster by managing working hours and alternating tasks between those that provide low and high reward (i.e., balancing administrative tasks with patient care). Notably, there are many logistical barriers that exist, particularly in disaster contexts, such as limited staff coverage occurring at the same time patient needs are at their peak. As such, to gain a better understanding of how to meet the needs of resident physicians at the frontlines of mitigating crisis and managing disaster response, it is critical to take a nuanced and in-depth look at the factors contributing to their psychological well-being and the barriers that hinder health promotion and help-seeking behaviors.

Gaps in the Literature

The empirical literature has provided a substantial amount of evidence that burnout continues to be an organizational hazard and has significant impact not only in physicians, but also in patients and their organizations (Salyers et al., 2017). A review of the literature suggests that current data is insufficient to fully delineate which classes of interventions targeted at preventing and mitigating burnout and co-occurring STS might be most effective. Research is needed to further evaluate the effectiveness of mental health first aid wellness programming, such as PFA, for different occupations of healthcare professionals including physicians (Asaoka et al., 2021).

The review of the literature identifies a significant need to further explore the gaps in the implementation of evidence-informed strategies targeted at preventing burnout and STS in resident physicians. Research into organizational interventions to prevent burnout and STS is needed to address the optimal approaches to the development and implementation of prevention strategies and to assess the feasibility, acceptability, and costs associated with these interventions (Giménez Lozano et al., 2021; West et al., 2016).

Furthermore, one of the most significant limitations of interventions targeted at preventing burnout is that universal solutions are sought for organizational issues without considering the significant variety of stressors that may lead to burnout or the unique stressors that appear in any one organization (Halbesleben et al., 2006). Research suggests that what is needed is a framework that does not include universal solutions for burnout, but one that helps determine the specific causes of burnout in a specific organization and population to allow stakeholders to develop interventions based on those identified organization-specific causes of burnout (Halbesleben et al., 2006; Maslach & Leiter, 2017).

The current study aims to bridge this gap by understanding the challenges to implementing organizational-based thriving and wellness programming that address burnout and STS in resident physicians in a suburban community.

Current Study

The current exploratory pilot study aims to understand organizational challenges identified by key-informants in the healthcare sector and resident physicians in preventing burnout and STS. Further, this study aims to assess the implementation of a peer-support wellness programming aimed at preventing burnout and STS in resident physicians. Lastly, this study seeks to bridge a gap in existing literature by increasing the understanding of how healthcare systems can foster a culture of health promotion and wellness.

The current study uses ethnography to observe a wellness programming among a culture-sharing group of physicians. Morgan-Trimmer and Wood (2016) indicate that ethnographic research can contribute to the understanding of how interventions work or do not work by learning nuances in social contexts within a culture-sharing group. Additionally, pilot investigations are recommended as a first step in evaluating the implementation of an intervention and in planning for a larger randomized clinical trial (Leon et al., 2011).

Research Questions

The current study investigates the following research questions:

1. a) What are the organizational challenges in preventing burnout and STS in resident physicians from the perspective of both key-informants and resident physicians?

1. b) What are resident physicians' and healthcare leaderships' perspectives on what a culture of health promotion and wellness would look like in their organization and how to achieve it?
2. What are resident physicians' experiences participating in a pilot testing of TOTS wellness programming, its acceptability, and its implementation?

CHAPTER TWO: METHOD

This chapter details the methodology used for the implementation of the TOTS wellness programming for resident physicians. This study is community driven and uses the Rapid Assessment Procedure-Informed Clinical Ethnography (RAPICE) approach to assess implementation processes. RAPICE embeds participant observations combined with surveys, and semi-structured interviews, to assess the implementation of interventions in a pragmatic fashion (Palinkas & Zatzick, 2018).

Research Design

Qualitative Research. Qualitative research has been utilized to study mental health of healthcare professionals and in health sciences and psychology (Ponterotto, 2005). Qualitative research is a flexible approach to scientific inquiry designed to describe and interpret experiences in a naturalistic setting (Denzin & Lincoln, 2000). Such an approach to research is particularly fitting for exploring co-creation and implementation of a thriving and wellness programming for a culture-sharing group. Furthermore, this approach is used to understand phenomena that are understudied, unexplored, or not yet adequately understood, and when critiquing power structures and systems (Creswell & Poth, 2017). Given the exploratory nature of this pilot study in seeking to understand the organizational challenges in preventing burnout and STS, as well as the importance of the structural power involved in the experience of burnout, a qualitative approach is fitting.

Qualitative research employs both deductive and inductive analytic approaches, grounding findings in the data while also allowing analysis to emerge (Thomas, 2006). Rooted in the ontological perspective of constructivism, the parallel existence of multiple truths and constructed realities is assumed (Ponterotto, 2005). The epistemological

foundation for qualitative research refers to the ways in which knowledge is exchanged and learned, and rests on the notion of a co-construction of reality and the dynamic relationship between researchers and participants. Axiologically, the researcher acknowledges the transactional nature of participant interviews and the value of critically conceptualizing and presenting participant voices (Ponterotto, 2005). Qualitative research similarly emphasizes the significance of the individual and aims to contextualize and provide in-depth descriptions of sociocultural experiences, instead of attempting to generalize findings to groups or populations. Finally, the recognition of the role that a researcher's identities, values, ideas, and social positions may interact with a study and influence the direction of data collected is important (Ponterotto, 2005). In the context of the current study, the researcher is a (mental) healthcare professional and generally familiar with challenges impacting healthcare professionals, yet may not be wary of nuanced lived experiences of resident physicians, as detailed further in the reflexivity section of this chapter.

Given the aforementioned philosophical, ontological, epistemological, and axiological foundations (Ponterotto, 2005), qualitative design is especially appropriate for examining the experiences of populations living and operating within organizational structures of power, such as resident physicians operating in healthcare systems. In the current study, a qualitative approach is fitting given the importance of understanding how a culture-sharing group (i.e., resident physicians) experience the implementation of wellness programming. The current study has adhered to these underlying philosophies through careful observation and dialogue on description, meanings, and interpretation of participants' experiences in the wellness programming.

Philosophy of Science Framework

The current study is informed by the paradigm of constructivism (Ponterotto, 2005). Constructivism, often used in qualitative inquiry, supports the assumptions that meaning is generated through understanding participants' subjective perspectives (Creswell & Plano Clark, 2017). Moreover, constructivists approach knowledge, truth, and scientific inquiry with an understanding that objectivity is an illusion and that each context, interaction, and experience is co-created and equally valid (Creswell & Poth, 2017; Heppner et al., 2016; Ponterotto, 2005).

In constructivism, the central idea is that human learning is constructed and that learners build new knowledge upon the foundations of previous learning. In other words, constructivist acknowledge each individuals' contributions, and their positionalities to what is being constructed (Peck & Mummery, 2018). Therefore, it is crucial for the researchers to bracket judgments and preconceptions about the nature and essence of participants' experiences. The exploration of biases and an honest examination of researchers' values and preconceptions, who are in a position of relative power to the participant, is also key. In this study, findings are informed by participants' experiences of the wellness programming, and the researcher is conscientious of her interpretations by checking-in with participants to ensure accuracy of interpretations.

Research Approach

Community Based Participatory Research (CBPR)

The current study uses a CBPR approach, building on community strengths and resources to facilitate collaborative partnerships in research. This approach integrates knowledge and action to address research gaps, and to inform culturally sensitive

methodology for underrepresented populations (Israel et al., 2019). CBPR is a useful approach as it enhances the quality and validity of research by involving key-informants with knowledge of the local community in the research process (Israel et al., 2017).

Congruent with a CBPR approach, Thriving Organizations Thriving Staff (TOTS) wellness programming was developed from a community-academic collaborative partnership between UCSB's Trauma, Adversity, Resilience, and Prevention (TARP) laboratory and the Santa Barbara Response Network (SBRN), a non-profit organization responding to the local community's health, mental health, and wellness needs. TOTS aims to provide support for organizations to address burnout and compassion fatigue amongst their staff, and to co-create sustainable programs that support wellness, mental health, and resilience.

During the early stages of developing TOTS, the Primary Investigators (PIs) met with key-informants, including leaders in five health and mental healthcare sectors and three social service agencies with specific target areas such as food insecurity, immigration status, and economic hardship, to understand the needs of community-serving organizations. The community-academic partnership was pivotal in understanding the needs of local community-based agencies and their personnel, shaping the research questions, co-designing the study, and adapting and implementing it for organizations. Through formal and informal meetings with community-serving organizations, healthcare systems and the public health sector were identified as participants in the TOTS wellness program. In the current study, congruent with a CBPR approach, key-informants including healthcare leaders, physicians, and wellness coordinators were engaged in the process of shaping research questions, co-creating the TOTS wellness program for specific healthcare entities and their healthcare providers. This study integrated CBPR with a human-centered design (HCD) approach to

delineate key challenges that key-informants in each sector were confronted with and what they identified as their organization's need. Like CBPR, HCD is a creative problem-solving framework based on the principle that "people who face those problems every day are the ones who hold the key to their answer" (Kia-Keating et al., 2017; Kurosu, 2009). By including such input, CBPR likely increased the cultural relevance and efficiency (Israel et al., 2019) of addressing burnout and STS among resident physicians. Specifically, key-informants and community partners emphasized that resident physicians are amongst at-risk populations for developing burnout and STS, and therefore should be prioritized for receiving TOTS wellness programming.

Rapid Assessment Procedure Informed Clinical Ethnography (RAPICE)

Specifically, this study uses RAPICE, an approach to collection and utilization of qualitative data in pragmatic clinical trials of mental health services implementation informed by clinical ethnography and rapid assessment procedures (Palinkas & Zatzick, 2018).

Ethnography. Ethnography is a method of scientific inquiry in the humanities and health science research (Maton, 1993). An ethnography focuses on an entire culture-sharing group (Creswell & Poth, 2017) and typically involves three methods of data collection: observation, interviews, and review of archival documents (Genzuk, 2003). Ethnographers argue that it is necessary to learn the culture of the group one is studying before producing valid explanations for the behavior, dynamic, and lived experiences of its members (Genzuk, 2003). Thus, it is a qualitative design in which the researcher describes and interprets the shared and learned patterns of meaning, values, behaviors, and beliefs of a culture-sharing group through observations, field noters, jottings, and follow-up interviews (Miller &

Salkind, 2002). Further, participant observations set the stage for more refined techniques—including interviews and questionnaires—and becomes more refined itself as the researcher has a greater understanding about the culture (Fetterman, 2010). While this method is particularly suited for exploratory research where novel phenomena are being investigated as an inductive process (Genzuk, 2003; Griffin & Bengry-Howell, 2008), it is a common approach in implementation science and in healthcare settings (Morgan-Trimmer & Wood, 2016). The current study uses clinical ethnography, defined as culturally- and clinically-informed self-reflective immersion that seeks to combine anthropological method of participant-observation with evaluation of others and reflexive evaluation of self (Palinkas & Zatzick, 2018). Note that in clinical ethnography, healthcare providers are typically the participant observers; however, in the current study, the researcher is observing physicians attending organizational-based programming aimed at addressing burnout and STS and co-creating wellness practices.

Rapid Assessment Procedures (RAP). One method for efficient data collection and analysis of qualitative data in a relatively shorter period of time is a technique developed by anthropologists known as RAP (Palinkas & Zatzick, 2018). This approach is designed to provide depth to the understanding of the event and its community context that is critical to the development and implementation ofquantitative (cross-sectional or longitudinal) approaches involving the use of survey questionnaires and diagnostic instruments (Scrimshaw & Hurtado, 1987). Distinguishing features of RAP include: (1) formation of a multidisciplinary research team including a member or members of the affected community; (2) development of materials to train community members; (3) use of several data collection methods (e.g., informal interviews, newspaper accounts, agency reports, and statistics) to

verify information through triangulation; (4) iterative data collection and analysis to facilitate continuous adjustment of the research question and methods to answer that question; and (5) rapid completion of the project, usually in 4–6 weeks (Harris et al. 1997). Essentially, the methodology is based on techniques of participant observation and non-directed interviewing.

RAPICE methods have been previously shown to be useful in disaster mental health settings, and the COVID-19 pandemic as a method for efficiently capturing and informing frontline responder decision-making, referrals, and resource allocation (Moloney et al., 2020). Additionally, RAPICE methods have been further developed in non-disaster settings, including acute-care pragmatic clinical trials (Palinkas & Zatzick, 2018) and can help understand the interplay between pragmatic implementation of a wellness programming, and the processes in which the program was co-created and implemented. Lastly, while there are many forms of ethnography, the current study will employ a realist approach to ethnography while observing participants receiving a wellness programming through their organizations. In realist ethnography, the researcher remains in the background as an omniscient reporter of the facts and reports objective data passively, uncontaminated by personal bias, political goals, and judgements (Creswell & Poth, 2017). Studies have demonstrated that realist ethnography is a common approach in healthcare as it can contribute to the understanding of implementation of interventions, while exploring their social contexts within a culture-sharing group (Morgan-Trimmer & Wood, 2016; Porter & Ryan, 1996).

Reflexivity and Positionality

Research reflexivity and positionality is critical to conducting rigorous and valid qualitative research. Researcher identity markers (gender, race, ethnicity, ability status, etc.)

and previous experience with a phenomenon or community under study impacts access to the community, the nature and development of the researcher-participant relationship, as well as the lens by which the research is conducted and findings extracted (Berger, 2015). One way this interaction has been conceptualized is through the notions of insider (emic), when the researcher identifies similarly to the community or has experienced the phenomenon in question, and outsider (etic), when researcher identities do not align with those of the population or phenomenon under study (Goetz & LeCompte, 1984; Morrow, 2005; Neuman, 2009).

In the current study, the researcher considers her own reflexivity and positionality. As a clinical psychologist-in-training, I have been providing clinical services to low socioeconomic status (SES) clients during and post-COVID-19, which allowed me to be part of a peer group of trainees. Further, I incorporate a trauma-informed perspective in my research and practice, and utilize a socio-ecological framework in studying the impact of various ecologies on individuals' psychological well-being (Bronfenbrenner & Morris, 2007). Notably, I have insider experience working in various outpatient mental health clinics and provide (mental health-related) patient care to healthcare providers. On the other hand, I am also an outsider as I am not a resident physician, and therefore have not lived through the nuanced and unique experiences of their roles and responsibilities.

There are benefits and challenges to both insider and outsider positionalities (Morrow, 2005). For researchers perceived to be insiders, assumptions of shared understandings can complicate data collection, such as when participants do not adequately verbalize experiences or situations that they assume the researcher is already aware of or privy to, or when researchers themselves overlook segments of data because they are

perceived to be common knowledge (Kanuha, 2000; Perry et al., 2004). Outsider positionality, alternatively, may hold advantages such as attention to particularities that may be lost as an insider, and also by gathering more in-depth explanations of the phenomenon being studied because of participants' perceptions of their outsider status (Morrow, 2005; Tang, 2007). The simultaneous insider-outsider positionality of the researcher in the current study has required careful reflexivity throughout the recruitment, data collection, analysis, and dissemination processes (Morrow, 2005). Through this research, I hope to contribute to a deeper and more nuanced understanding of burnout and STS in healthcare professionals, systemic ways to prevent burnout CF, and elicit how healthcare systems can better support, advocate, and facilitate health promotion for their providers.

Participants

A total 7 participants were included in this study. Participants were (1) 3 key-informants who were each leaders in the health and mental healthcare sectors involved in the co-creation of the wellness programming, and (2) 4 attendees who received a wellness programming and participated in the co-creation of developing wellness practices within their organizations. Given the suburban community context for the current study, there are many overlapping social connections; therefore, extra care has been taken to protect the identity and ensure anonymity of participants who could otherwise be identified with further details regarding their demographics. Therefore, specific demographics related data, specific roles and specialties, and any other potential identifying data are intentionally omitted. Please see Table 1 for review of participant pseudo initials, role, and their participation in the study.

Recruitment

Participants were provided a survey that was part of a larger study examining community needs post COVID-19 pandemic. (1) Key-informants, including leaders in health and mental healthcare sectors, who completed the survey were invited for a needs assessment interview to gain a deeper understanding of key challenges that healthcare providers are confronted with. Based on these interviews, resident physicians' mental health and well-being were at the center of dialogue among key-informants, which drove the direction of this study. Collectively, through community voice, formal and informal interviews with key-informants, leaders, and community-stake holders in healthcare, it became clear that resident physicians are a top priority for wellness interventions and would benefit from a wellness programming. (2) Resident physicians were recruited from community-serving organizations and healthcare systems.

Procedure

The current study was approved by the Institutional Review Board (IRB) at UCSB and the organizations where participants were recruited from. Interested participants were provided with an IRB approved consent forms which details the study's purpose, procedures, risks, and benefits. Participants were notified that their participation is confidential, voluntary, and that they may decline to participate at any time without being penalized. Consent forms were presented physically for participants who were interviewed and/or participated in the wellness programming in-person. Consent forms were also provided electronically via Qualtrics for participants who were interviewed remotely. Prior to observing participants and conducting interviews, the researcher verbally reviewed the consent form with participants and answered questions.

Data Collection

Data collection occurred in three phases as outlined below:

Phase One

In phase one, which was aligned with the CBPR approach to research, semi-structured interviews were conducted with community partners and included three key-informants in the physical and mental healthcare sectors to understand the needs of physicians and their organizations. These interviews helped illuminate key challenges that healthcare organizations faced in addressing burnout, STS, and help-seeking behaviors, and provided an understanding of challenges in implementation of interventions (Israel et al., 2019).

Development of TOTS Wellness Programming. Further, congruent with a CBPR approach, community partners including physicians, wellness coordinators, and leaders in the healthcare sector participated in on-going formal and informal discussions to co-design, develop, and adapt TOTS wellness programming for various community-based organizations and their personnel. Specifically, an iteration of TOTS wellness program for resident physicians was developed by key-informants in the healthcare sector, including physicians, wellness navigators, and the research team. The iteration of TOTS wellness program for physicians included the following components:

1. Group introductions and mindfulness
2. Psychoeducation on PFA, trauma-informed care, and burnout in physicians
3. Dialogue and co-creation of wellness in healthcare systems, with specific attention to residency training programs.

Phase Two

Implementation of TOTS Wellness Programming and Ethnographic Observation. In phase one, resident physicians were offered the TOTS wellness programming in a single group format. The researcher used fieldnotes to observe and document participants' interactions, behaviors, and group dynamics to gain an understanding of the culture-sharing group of resident physicians involved in patient care. The researcher also completed a summary form to record behavioral observations, notable characteristics, and any immediate impressions regarding themes or remaining questions. Please see **Appendix B.** for a copy of the Ethnographic Observations Template.

Pre and Post Surveys. Participants who completed the wellness programming in phase one were asked to complete a total of two brief surveys pre and post programming to measure implementation outcomes.

Follow-Up Interviews. After participating in the TOTS wellness programming and completing post-participation surveys, participants who signed up to be interviewed were contacted via email to participate in a 45-minute semi-structured interview to share their lived experiences pertaining to personal and professional barriers in preventing burnout and STS. The interviews also captured participants' perspectives on what wellness means to them, how organizations could prioritize wellness, and what a culture of health promotion in healthcare systems is to them.

Additionally, the follow-up interviews provided an opportunity to for participants to share their perspectives about the implementation of TOTS wellness programming (content, acceptability, gains) (Creswell, 2013). Sample questions included: what wellness means to participants, what participants view as potential barriers and facilitators to proactive help-seeking behaviors, how participants experienced the TOTS wellness program, and how a

cultural of health and wellness could be instilled systemically and organizationally in the healthcare system. Participants also provided discrete recommendations for healthcare leaders and policy makers. During the interview, the researcher noted observations and followed-up with participants regarding their responses on the survey data to ensure clarification on their responses.

Additionally, two key-informants who participated in TOTS wellness programming were reinterviewed to debrief about the implementation and effectiveness of programming. This interviews were scheduled for 60 minutes and provided (1) in-depth knowledge of implementation of TOTS programming such as, its acceptability, cost, feasibility and receptiveness among physicians, and (2) inform how a culture of health promotion could be sustained within their organization.

Semi-structured, in-depth interviews were conducted in-person or via Zoom video or audio-recording (depending on participants' preferences) and transcribed via Zoom's autogenerated transcription services. At the end of each interview, the interviewer read each transcript line-by-line to check for accuracy, completed an interview template, and research memo to note immediate impressions presented during the interview (Palinkas & Zatzick, 2018). This stepped ensured integrity of data and quality assurance. All interview transcripts were deidentified; all potential identifiers related to the individual or their organization were redacted to ensure anonymity, and were stored electronically in a secured, password protected folder. Recordings were deleted permanently after completing transcription and checking them for accuracy.

Measures

Semi-Structured Interview with Key-Informants (Part 1). Semi-structured interviews were conducted with key-informants from the health and mental healthcare sectors to assess needs of healthcare organizations and their providers. Congruent with CBPR, these interviews helped form the research study and questions. Please see **Appendix A.** for a copy of the Semi-Structured Interview Protocol (Key-Informants).

Pre-Programming Survey. Prior to beginning programming**,** participants completed two questions that capture the challenges related to burnout and wellness in their organizations, and whether they have the tools to address such challenges. These questions are: (1) What are the challenges related to staff burnout and wellness that your organization is trying to address? (2) What tools (if any) do you currently have to address these challenges in your organization? Please see **Appendix C.** for a copy of the Pre-Programming Survey.

Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure and (IAM). IAM and AIM are brief four-item measures of implementation outcomes that can be used independently or together (Weiner et al., 2017). IAM and AIM can be administered to a wide range of stakeholders to determine the extent to which they believe an intervention or an implementation strategy is acceptable, and appropriate.. Sample questions include, "(INSERT INTERVENTION) seems fitting" and "(INSERT INTERVENTION) seems implementable." Items are rated on a 5-point Likert scale, from 1= "completely disagree" to 5= "completely agree" (Weiner et al., 2017). The wording has been slightly modified (e.g., intervention is changed to programming) and the current study only utilized IAM and AIM segments of the questionnaire, and has eliminated the Feasibility of Intervention Measure (FIM) which is included in the original questionnaire. The AIM and IAM demonstrated strong psychometric properties in a series of three studies conducted by

Weiner et al. (2017). Specifically, the measures demonstrated content validity, discriminant content validity, reliability, structural validity, structural invariance, known-groups validity, and responsiveness to change. Please see **Appendix D.** for a copy of the AIM and IAM.

Post-Programming Qualitative Survey. Open-ended questions were provided in order to capture context and how participants experienced the thriving and wellness programming. Questions included: (1) Which challenges in your organization did this program help you address? (2) What were the valuable lessons and tools from today's program? (3) What did you enjoy about today's program? (4) How can today's program be improved? (5) Any recommendations for future programming? Please see **Appendix E.** for a copy of the Post-Programming Survey.

Semi-Structured Interview with Resident Physicians. Semi-structured interviews were conducted with resident physicians to gain a nuanced understanding of resident physician's lived experiences related to factors contributing to burnout and what wellness means for them. Additionally, these interviews provided an opportunity to discuss how participants experienced the TOTS wellness programming and were asked questions about their organizations' culture on health promotion, personal and professional barriers that impede prioritizing mental health and wellness, and ultimately the barriers and facilitators to prevent burnout and STS. The perspective of participants regarding ways organizations could instill a culture of health promotion was further understood. Please see **Appendix F.** Semi-Structured Interview Protocol (Resident-Physicians).

Semi-Structured Interview with Key-informants (Part 2). Semi-structured interviews were conducted with same key-informants who elected to be reinterviewed after the implementation of TOTS wellness programming to obtain their perspective on

implementation and effectiveness, outcomes and the sustainability of programming. Please see **Appendix G.** Semi-Structured Interview Protocol (Key-Informant).

Data Analytic Plan

The RAPICE approach incorporates the use of several data collection methods, including participant observation in clinical settings, the recording of field notes, jottings, formal and informal semi-structured interviews (Palinkas & Zatzick, 2018). RAPICE is designed to be adaptable to diverse real-world health service delivery contexts (Palinkas & Zatzick, 2018). When combined with quantitative surveys, RAPICE can be used to collect and analyze data to address important research questions that govern the principles and practice of implementation science. Central tenants of the approach include the formation of a multidisciplinary team, use of multiple data sources, iterative data collection and analysis in real-time, and rapid completion of the project. The multidisciplinary research team may include a principal investigator, participant observer (PO), a research assistant, and external consultants.

First the PO observed the TOTS wellness programming, wrote memos, and jotted field notes related to the process and implementation of the programming. Then, the PO held a debriefing session within 48 hours of the TOTS wellness programming with the research team to resolve conflicting observations and interpretations through investigator triangulation (Creswell & Clark, 2017) and obtain a preliminary interpretation of the meaning and significance of data. Preliminary findings were discussed with the research team to gain more insight into the data and its context and to obtain an initial interpretation of its meaning and significance.

Second, transcripts from the semi-structured interviews were reviewed to perform preliminary analysis using the immersions/crystallization (Miller & Crabtree, 1992) and focused thematic analysis techniques (Saldana, 2016) that are part of the RAPICE methodology (Palinkas & Zatzick, 2018). Transcripts were coded by the research team to condense the data into analyzable units. Segments of text ranging from a phrase to several paragraphs were assigned codes based on a priori (e.g., from a semi-structured interview guide) or emergent themes (also known as open coding). Following the open coding, codes were assigned to describe connections between and within categories (also known as axial coding). Based on these codes, NVivo 12 was used to generate a series of themes arranged in a treelike structure connecting text segments grouped into separate categories of codes or "nodes." Consistent with previously explicated RAPICE methods (Palinkas et al., 2021) a discussion was ensued until the research team reached consensus as to the meaning and significance of the data. Inter-rater reliability in the assignment of specific codes to specific transcript segments were assessed for nine randomly selected transcripts. For all coded text statements, the coders agreed on the codes 84% of the time, indicating good reliability in qualitative research (Palinkas et al., 2021).

Third, through triangulation of data (e.g., observations, surveys, and interviews), a better understating of the implementation of TOTS wellness programming was achieved. The process of integrating observations, surveys, and interview data occurred in three forms of merging, connecting, and embedding the data (Creswell & Clark, 2017; Palinkas & Cooper, 2018). Observations, surveys and interview data were *merged* to provide answers to the same questions, *connected* to provide answers to related questions sequentially, and *embedded* to provide answers to related questions simultaneously (Palinkas et al., 2019). Taken together,

the results of these analyses informed how healthcare systems could refine their organizational-based programming to address the needs of resident physicians and to find ways to cultivate a culture of health promotion in organizations (Palinkas et al., 2019).

Saturation

Saturation is used in qualitative research as a criterion for discontinuing data collection and/or analysis, and is referred to as 'the gold standard by which purposive sample sizes are determined in health science research' (Guest et al., 2006). The selection of participants for interviews reflects and represent the homogeneity that exists among the participants' sample pool to gain better understanding of their lived experiences (Creswell, 2013).

CHAPTER THREE: RESULTS

Challenges in Preventing Burnout and STS

RQ 1. a) What are challenges in preventing burnout and STS in resident physicians from the perspective of key-informants and resident physicians?

The present analysis generated six key themes related to pandemic stress and its consequences (i.e., the unforeseen challenges of working as a frontline healthcare provider/emergency response during COVID-19) identified by key-informants and resident physicians).

Themes related to the unforeseen challenges of working as a frontline healthcare provider/ emergency response during COVID-19 were as follow:

(1) Unique chronic stressors related to COVID-19

(2) Healthcare providers' experiences of STS and burnout

(3) Sense of isolation among healthcare providers

(4) Lack of opportunities for debrief and process

(5) Organizational attitudes related to mental health and wellness

(6) Lack of national recognition of healthcare providers

Next, the results underscored the following four themes that highlighted the nuanced challenges related to mental health, wellness, and help-seeking:

(1) Internalized stigma related to mental health

(2) Time constraints

(3) Pressure to perform and perfectionistic tendencies

(4) Supportive leadership

All themes pointed to the salient structural factors that participants perceived as pivotal to addressing burnout, STS, and help-seeking behaviors among physicians working in healthcare systems. Although key-informants and resident physicians have different roles, their responses were generally consistent with each other as they highlighted similar factors contributing to physician burnout and STS. Resident physicians however identified three themes related to mental health, wellness, and help-seeking behaviors that were primarily specific to their trainee status.

Each theme is described in the following text, including exemplar quotes from participants. To protect confidentiality and anonymity, when quotes are provided, pseudonyms and broad categories of employment are elicited, and minimal information about the employers, areas of specialty, and locations are provided.

(1) Unique Chronic Stressors Related to COVID-19: "We Were Blown Out of the Water by How Stressful the Pandemic Was"

Healthcare providers were at the frontlines of responding to a global pandemic when COVID-19 was announced in the U.S. in March 2020. Participants expressed that within the intense and stressful context of a global pandemic, employer and organizational expectations of high productivity caused them to over-function at work at the cost of their mental health and wellbeing, which resulted in one key-informant leaving her organization. NO, a seasoned health and mental healthcare provider who also served as a key-informant in this study described:

> I left medicine after 20 years, and one-third of us did, like one-third of us left medicine. And so, if all of the medical community, if a third of us took off, then [for] the two-thirds that remain, it's just going to erode… like how do you sustain this

> system with two-thirds? And so the people who are left, are left with less, yet more, I mean not more pandemic, but just like more boomers, it's not going to get slower out there for healthcare… So I do think that this shortage of staff (that's a passive way to put it), I think that the historic failure to prioritize healthcare workers has just this unbelievably cascading consequence.

Participants described being "blown out of the water" by how "stressful" the COVID-19 pandemic was and that the continuation of it created further CF and physical exhaustion. Further, they expressed that patients' perceptions about providers also shifted during the pandemic. For example, at the beginning of the COVID-19 pandemic, healthcare providers were considered "healthcare heroes," yet as the pandemic continued and lingered for an extant time, healthcare providers were no longer heroes and were reframed negatively as obstacles between patients and their loved ones as a result of COVID-19 social distancing protocols in healthcare systems. UV, a seasoned healthcare provider and key-informant in the field of physician wellness shared that over time, the resentment and negatively of patients towards healthcare providers impacted the providers' mental health and well-being and possibly contributed to an increase in low morale and moral injury. He explained:

> Of course, the pandemic continued longer than anybody ever thought. And, interesting that in 2020 when it first hit, healthcare workers were heroes. We were beginning the pandemic, we were in it, we were ready to take it on, we were okay. Then the pandemic continued and now we are dealing with compassion fatigue and a lot of these other things. And how patients see us now is different as we are no longer 'heroes.' We are someone that's in their way and their rights, or whatever else… I can't really quantify the negativity that I feel from a patient and their family. We are

> slapped in the face when we start saying you can't come in with your family member. That would make me [as a healthcare provider] feel wrong. Putting myself as a patient's family member, if my loved one is going in for surgery and the doctor is not letting me in there, and my loved one is dying in an ICU and I can't be there, holy smokes the community is hurting, and they're angry… Then it turns into all of these other political aspects; wearing masks and not wearing masks, all of those other things, even though they are public health guidelines, there is a politicization and a rights thing. I'm here just trying to do my best… When the nurse says 'I'm sorry you're not vaccinated, you can't come in to see your family member, that sets everybody off against each other. And so that's one of the things that we deal with — compassion fatigue, it's every day that you're treated like a jerk, 'I'm just trying to do my job, I don't have any compassion today.' So many of us showed up to work [during the pandemic] empty. So, what happens? That's how we treat our patients, how we treat anybody else we come in contact with, and how we treat our coworkers, it's just this terrible feedback loop. And how do you get out of it?

Participants shared that burnout syndrome is not a new phenomenon in the healthcare profession and it's a syndrome that they are intimately familiar with. However, the pandemic "took it to the next level." DF, a seasoned wellness coordinator in the public health sector who also served as a key-informant in the current study shared that healthcare providers were "exponentially more inundated with work and pressure," than they would have imagined due to the emergency response of the COVID-19 pandemic. He shared that healthcare providers providing patient care, as well as individuals in disease control and epidemiology, were at the frontlines of COVID-19, and were working "non-stop." He explained:

> So many folks were reassigned, and myself included, completely away from the role that they understood to be their job. But we, we agreed to be emergency response workers and when the emergency is a public health one, that requires more than all hands-on deck, that requires onboarding extra staff… it's been a wild ride. It's interesting because many of our duties didn't get to stop with the pandemic, because we're still public health, we're still responsible for all the services that we typically provide, in addition to being emergency response workers… I know after speaking to so many staff, it's been something that a lot of our staff have taken personally, because so many of our staff are so dedicated to their service and their work, that a lot of folks really put themselves on the line… There were times when there were coworkers around me who burst into tears. And that was not super uncommon because of the stress of the work, and because so many of my co-workers are just so dedicated. And it's not, something we didn't sign up for, [rather] it's because, it's something that we pour ourselves into, and take very personally, [the fact] that we serve our community.

(2) Healthcare Providers' Experiences of STS and Burnout During COVID-19: "Residents Being Drained from Being a Frontline Provider During COVID-19"

Further, participants expressed the mental health challenges experienced during the pandemic as their patients passed away. A key-informant expressed feeling a sense of "self-blame," despite knowing that self-blame is a cognitive distortion, "especially during the context of a global pandemic." DF described:

> When we had our first COVID-19-related death, I personally took it pretty hard, because I felt like we had been burning the candle at both ends. You know, I thought

> that was preventable, but of course that's not something you can control in a global pandemic. I felt like we had been working so hard, I was like, you know, we'll come through this fairly unscathed, but that [patient's death] was pretty difficult for me.

Another factor that participants highlighted was the heightened "pressure" at work during COVID-19. NO, described witnessing a sense of "remorse," "self-blame," and "regret" in healthcare providers seeking mental health services during the pandemic. For example, during the peak of COVID-19, she witnessed an attending physician at a healthcare system experiencing "guilt" and "moral injury" for overworking their staff. From another perspective, ZP, a resident physician shared that while in medical school, she witnessed "residents being drained from being a frontline provider during COVID-19, and just working with toxic attendings and programs that were overworking them, not to necessarily further benefit their residents' education, but just because they needed the residents as a workforce."

AB, a resident physician shared that "recently the burnout has definitely stemmed from COVID-19." She expressed that COVID-19 occurred while she was a medical student and she witnessed medical interns and residents challenged with high patient volumes and were forced to work at a level that is not typical of most first-year residents and trainees. She shared:

> It was a very unusual time and they say, 'What doesn't kill you makes you stronger,' and I've seen it in [residents who worked during the peak of the pandemic]. Now that things have calmed down, they feel like they're a lot more well-versed when things get bad. So I think that a lot of the hunkering down and just getting through it type of mentality that started with COVID-19 is still continuing to seep into the work that we do, and it's almost like we've seen the worse, so 'how bad could it really be.'

Further AB added that, “burnout means different [things] to different people,” and individuals have different reactions when exposed to secondary trauma and stress. She expressed the importance of reading the room and acknowledging the energy of the environment. For example, if providers’ morale is low, it’s important to have a dialogue instead of ignoring the signs. She expressed:

> People express [burnout] in different ways, people who are outwardly irritable or crying after a really difficult time, or those who just kind of become recluses, and their positivity starts to dwindle, they become negative people. I think it's hard when people are not paying attention to [burnout related symptoms], because they don't know what to look for. And I think awareness is the biggest factor. I don't think anyone who is averse to discussing [burnout and STS], it always just seems like there’s bigger things to talk about especially during the pandemic, and I think [burnout] is a huge one. I think it's like the elephant in the room sometimes. Yes, we're busy and morale is low, people have identified that, but nobody wants to take that extra step and have the conversation about why morale is low, you know? ‘Oh, maybe it's because the patient load is pretty high this time of year, and nobody is identifying that.’ It means that we're all stretched to our limits.

(3) Sense of Isolation Among Healthcare Providers Responding to COVID-19: "… Our Primary Injury to Our Sense of Self Was Isolation”

Additionally, the pandemic created a profound sense of “isolation” among healthcare providers and staff both at work and at home. Many healthcare systems were not equipped to address the negative psychological impact of a global pandemic on frontline healthcare providers, who were inundated with high volumes of patients contaminated with COVID-19,

and high volumes of patient deaths related to COVID-19. Participants reported being challenged with navigating the insurmountable stressors of dealing with a novel virus that was highly contagious both at work and at home. They shared a sense of worry about potentially transmitting the virus to their family members as vaccines were not yet developed and disseminated at the time, which led to isolating from friends and family members.

Participants also shared the challenges of being isolated from colleagues during the pandemic as all team building actives that created a sense of "shared experience," "community," "team building," and "camaraderie" among providers and staff were cancelled. They expressed that "community bonding" is critical, especially during a state of emergency as it regulates the "stress-response," when providers and staff are collectively going through a shared adverse life experience. They highlighted the importance of having a support system at work where one feels safe to process what they are experiencing, and feel "validated." In this context, UV described:

> There's a lot of the heaviness, you just feel it among your colleagues, the simple interactions, the phone calls you're making with the consultant, collegial conversations that when occurs, seem to be more on the negative side. I don't really have any kind of data in that regard, it's definitely a personal feeling. And this also has to do with the idea that we divided ourselves up, [during the pandemic] we were no longer meeting together in lunchrooms, we weren't going to get coffee together, you know doing any of these interactions as colleagues, even among the medical staff. We weren't doing socialization activities and stuff with our staff. Before the pandemic, there would be at least six events within my small organization that would have been entirely staff and docs going to a barbecue or a camping trip, or a concert,

> or something like that. There would have been multiple times where we would have met more off-the-cuff at one of the breweries or one of the wineries to go meet and hang out. None of those spontaneous things happened [during the pandemic].

In this context, NO also stated, "…there's a passive consequence of the isolation that the pandemic created and then there's an active process by which organizations can isolate their workers from each other [by not brining the workplace community together to process the psychological impacts of the pandemic] ... I think that our primary injury to our sense of self was isolation…" NO further elaborated on the importance of a shared sense of workplace camaraderie in mitigating workplace burnout. She stated, "If I could summarize how to prevent burnout in one word, it would be 'groups,' I feel like that's the strategy for preventing burnout and creating a sense of solidarity, and shared experience." She further described that "working in isolation" during the pandemic prevented community connections to form, and that workplace community is essential to one's wellbeing, especially when working under heightened pressures such as navigating patient care during a global pandemic. She described:

> This happened with [healthcare providers] in the pandemic whom I saw. The people who were isolated and were living alone were going fucking crazy, the way that you would, if you were in isolation for a year. And so often people will come to me for individual therapy and the thing they needed was groups… You need to be seen people need to know that you exist, people need to see that, and say 'hey, compared to two weeks ago you're not looking so good.' They need to be able to see you over time. So a continuity of the self is corrective to the idea that you're a means to an end, so being seen by your cohort, being seen by your peer group, being seen by people in

> over a period of time lets [colleagues] break into the idea that there's just like relentless grind, and say 'Honey, you're tired, like did you know that you were tired, I know that you've signed up for three more shifts this week, because you just haven't been sleeping, and you figure what the hell if you're not sleeping you might as well sign up for some more shifts, but you're tired.' And so, in the absence of those groups, we just all end up overtired, in fight or flight, you know. Then you will work harder to be seen.

Another key-informant further highlighted the importance of community connections and shared experience in closing the stress-response cycle, especially when healthcare providers are at the frontlines of responding to collective trauma. He added that taking something as simple as taking a moment to check-in with a colleague and talk about a shared experience, whether it is positive or negative can have a profound impact in "filling up" providers' "compassion cup." UV described:

> … It turns that 'we lack the camaraderie with each other,' and so 'where do we fill our compassion cup?' We fill our compassion cup by sharing a story of shared experience… One of the things we have learned about PTSD is so many folks who have PTSD are never able to complete their stress cycle, their grieving cycle, or whatever point in their cycle. So whenever there is a trigger, they go back to one of those points. Like say anyone in the ICU or wherever else they're in, that they experience some level of stress, if they can't have that moment of talking to their colleagues about a shared experience, whether it's negative or positive, they're missing out so much on filling of their empty cup, and refilling with camaraderie, and positivity. And just the simple aspects of like, 'How are you doing, living the dream?'

> and hearing all the sarcasm that happens in those words as opposed to 'How are you? Things are really tough right now, this is what I'm dealing, how are you doing?' you know, some way of exposing yourself in order to have someone feel as if it's okay to expose themselves.

(4) Lack of Opportunities for Debrief and Processing During Covid-19: "[It's Important to] Have Someone to Partner with and Help Me See My Blind Spots"

Participants noted that organizationally-ran debriefing process was inadequate during the pandemic and that the absence of debriefing, especially during crises or states of emergency can negatively affect healthcare providers' well-being. UV discussed that being in conversation with others, helps an individual see their "blind spots" and "look inward," which can be meaningful, especially after a critical incident, adverse or trauma event. He further added:

> What kind of debriefing do we have? None, as far as I know… I don't think there's much of a debriefing overlap in various sectors of the organization. [It's important] to have someone to partner with, and help me see my blind spots, how to ask, how to look inward, and really listen to the organization and stakeholders, and bring ideas together.

UV further added that debriefing is not a practice that a healthcare system could mandate a non-employee physician, yet there are fundamental benefits in encouraging physicians to hold debriefing after an incident, death, or a crisis. He shared:

> You can't make the non-employee doctor do debriefing and rounding with the nurses after the crummy event. You can't mandate it, but you can hope that they're going to do it, you can talk to them about the importance of it, but you can't mandate them.

> You can however mandate your charge nurse to group huddle; bringing [healthcare providers] together to talk, that's a beautiful thing to be able to do, that closes the loop with a person in a stressful incident or whatever instance… Bringing it all together and listening to people… It's closing the [stress-response] loop... And we have that barrier where we can't really mandate the docs, I hope they [as in leadership] do [mandate them] … I think there's a huge benefit and huge possibilities [in mandating physicians to debrief], but so many of them don't [hold debriefs].

(5) Organizational Attitudes Related to Mental Health and Wellness: "Mental Health as a Luxury We Don't Have in Emergency Response Circumstances"

A common theme noted by participants was the notion of mental health being perceived as a luxury, rather than necessity, especially during a global crisis such as, the pandemic. Participants described that if mental health is perceived as a luxury by leaders in the healthcare sector, then wellness practices are not prioritized in the organization. DF expressed "some folks [in leadership] view prioritizing their staff's mental health as a luxury that we don't have in emergency response circumstances, or view it less of a priority."

Further, participants expressed that organizational practices frequently send the implicit message that healthcare providers should be able to handle a high-volume workload, and manage their own mental health and wellness. For example, ZP shared "I think that a lot of times residents are not asked how they're doing or asked, what they [as in attendings] can do to help" because there is a common notion among healthcare leaders that residents are "unbreakable" and can "handle a lot of stress."

In a similar vein, UV also shared:

> As far as the barriers go, when the organization looks at their providers and say, 'It's your job to deal with your own wellness, you should sleep better, here's a meditation app, here's the issue, here's what you should be doing,' it becomes problematic. Instead, they should be like, 'Oh hey, we have an onsite gym for our staff, hey we have a shuttle service that goes to the train station, so people with further commutes can get to work easier, or hey we have childcare onsite so that you can see your child during your break.'

Participants described that much of wellness practices depends on the culture of healthcare systems, what messages they are explicitly or implicitly giving their providers and how they are implementing wellness practices. UV remarked that:

> 80% of wellness is related to the organization while 20% belongs to the individual, that means 20% belongs to me, as in how I will sleep, how much I drink, how will I eat, exercise, meditate, and all of these other things, 20% belongs to me as my own resiliency and ability to keep burnout at bay.

(6) Lack of National Recognition of Healthcare Providers Responding to COVID-19: "Having Anniversaries, It's Just Such a Good Harm-Reduction Strategy"

Participants described a lack of meaningful national recognition of healthcare providers responding to the pandemic, and the importance of recognizing providers in tangible ways beyond thanking them for being "heroes." NO explained:

> We don't have any kind of national or local recognition of the kind of place in time [regarding] where we're at, where we could have collectively lie down… Like we haven't had a mourning, we haven't had recognition, we haven't had anniversaries, we haven't had any announcements of like 'Let's all take a breath.'

Similarly, GO, a resident physician, added "Everyone's like, 'We appreciate you front-line workers.' Great, but there aren't a lot of other ways that make you feel appreciated. Like, tangible ways, you know what I mean? For example, having one big day where we could have something, some recognition, some celebration, that would have been really good."

Lastly, DF shared that two years has passed since the announcement of the global pandemic in the U.S. and "There's an appetite for recovery work and building communities now, because we're less in an emergency response, and more in recovery [mode], in terms of dealing with the pandemic. Perhaps, the bootstraps can be lowered a little so people can maybe take off their boots."

Figure 1. below highlights the impact of pandemic stressors on factors contributing to burnout and STS in healthcare providers.

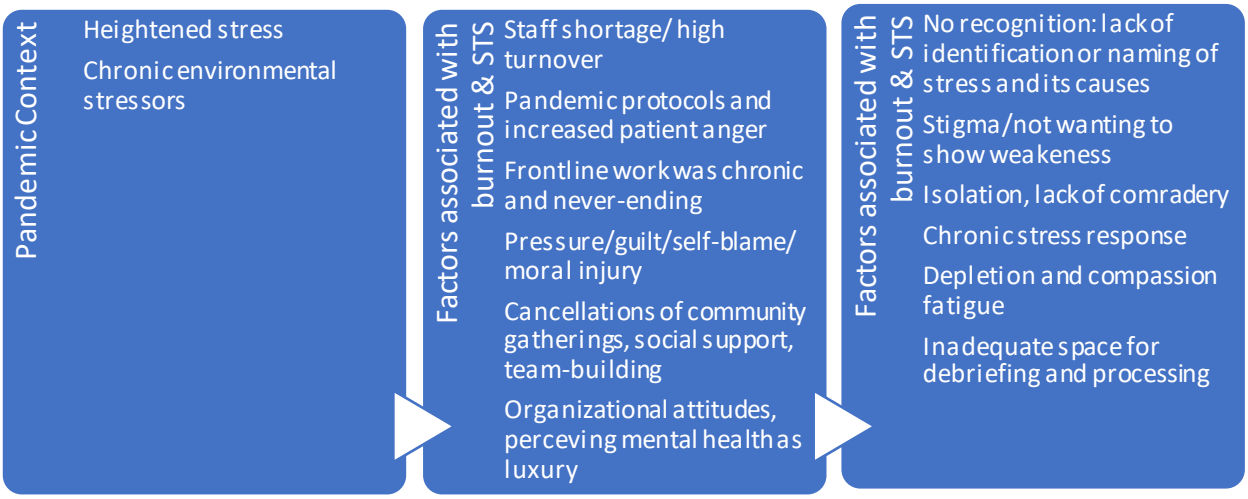

Figure 1. Pandemic Context Associated With Burnout and STS in Frontline Healthcare Providers

Additionally, mental health, wellness, and help-seeking related themes were as follow:

(1) Internalized Stigma Related to Mental Health: "There is This Aspect of Competing with One's Inner Self" and "*The Awareness That 'It's Okay to Not Be Okay'"*

Resident physicians explained that the stigma associated to mental health is a significant barrier to seeking mental health support and speaking up about challenges with peers and supervisors. They expressed witnessing colleagues being at a "breaking point before seeking support. Specifically, a participant shared that the culture of medicine makes it challenging to ask for help. In this context, AB described:

> I think a lot of [barriers] stems from the crux of who a lot of us are, coming into medicine. I think medicine and the path to medicine tends to be a very individual one. Collaboration is not something that is always seen at the forefront, starting from the classwork and undergrad to even in medical school, it's all a very individual path, and so competition is very innate in all of us. So I think we're in residency now, trying to eliminate this feeling of competing with others, and realizing that we all need to work together. However, there is this aspect of competing with one's inner self. And so, sometimes this feeling of asking for help is like you're showing signs of weakness, and you don't want to show that aspect of yourself to yourself, and to others. I think that's one driving force [in not seeking mental health support].

Another participant shared, that when residents are just starting their careers, they don't want "to appear" as if they are "struggling," since they may come across as being "incompetent" and may later experience career repercussions. For example, GO shared:

> You don't want to appear like you have a lot of problems when you're just, you know, getting your career started. You want to be like a strong resident and look like you're not struggling, obviously. I sometimes can delay things and you know it can make me

> seem like I can't handle it… I think we always want to look competent… And you don't want to feel [incompetent]obviously, ever, but especially when you're taking care of people, giving them medicine. There's always a lot going on. So I think everyone always feels that way a little bit… knowing that everybody is open to helping and wants you to feel supported, and always brings this up in a way, and is looking to find out if everyone's doing well is helpful… the awareness that 'it's okay to like, not be okay,' that kind of environment might be helpful.

Resident physicians also highlighted the importance of overcoming the idea that "the weak" individuals are the ones who "suffer" and have mental health problem. They expressed that if more senior level physicians spoke up about their challenges, it would make junior level physicians feel more at ease in seeking support. In this context, AB also shared, "I think, honestly, seeing others do [speak up about their challenges] is a huge force in recognizing, 'Hey, like, if this person's asking for help, I probably have those same issues, and I'm not identifying them yet.' Relatedly, AB also provided the following insight:

> If we were to have a model, we know that the model is like 'See one, do one, teach one,' and so we just need to overcome the idea that there are a category of people who can tolerate suffering and a category of people who can't tolerate suffering. It's important to ensure that [healthcare providers] are getting the same kind of solidarity and recognition.

(2) Time Constraints: "We Work Over 100 Hours a Week"

Resident physicians discussed how time constraint limits them to engage in healthy behaviors and self-care practices, especially during long duty hours where resident physicians are expected to work approximately 72-100 hours weekly. It is during these long

hours that things become “dark” and wellness “goes out the window,” according AB who further shared:

> When we work night shifts we work over 100 hours a week. So yeah, those aspects, or those times in our lives are literally dark, they’re nights and they’re dark times, because I think those are the times when wellness kind of goes out the window for me. And we just literally work 15 hours a day at minimum, and then we come home, our bodies are in a constant state of jet lag. And you know, you're sleeping for maybe a maximum of 4 or 5 hours of good sleep, and then you're up again, and you come and do it all over again. So definitely, I think, after periods of nights, I've personally felt very burned out .

GO also noted that that time constraints prevents peers to prioritize meeting outside of work for team building and forming community connections. She noted:

> We're always just so busy working. We don't always have chances to all get together and kind of just be casual and meet, you know. It's always in the work settings, so like some of [the other resident physicians], I know them just because I've talked about like patients or something, but that’s very different obviously, than being open and vulnerable and relaxed… Obviously, mental health discussions are the kind of stuff that some people have a harder time talking about, and it is more on the sensitive side of topics in general.

Another participant stated that although she has developed a healthy lifestyle which supports her mental health and wellbeing (e.g., exercising regularly, engaging in healthy eating habits, staying connected with her support system, and attending to her social life

outside of work), it is not feasible to maintain these routines during longer duty hours due to "the lack of time." In this regard, ZP stated:

> [When you are limited with time] you fall out of certain patterns that you had before that were really helpful, for me, it's exercise. So, there are times where I physically just don't have time in the day to go to the gym, so on those days it's more challenging. For example, I just came out of working 72 hours a week, and I was working from 7:00 A.M. to 7:00 P.M., and so I got food, and then by the time I got home and showered, it was already time for me to go to bed and fall asleep and get up the next morning. And so in those rotations you really feel it, because you're not in this like nice, synchronous thing that you normally feel comfortable with, to kind of get your mental health in order, and for me that's exercising, eating healthy, talking and chatting with my family, being social, doing things outside of work, just physically being outdoors, and having like sunlight on my face. All those things are really hard to do when you have 12-hour workdays.

Similarly, AB added that "time" is a significant factor in preventing resident-physicians from attending to their self-care practices. She stated, "When there's a mountain of tasks to do, I just don't know where I'm going to find time to take that walk outside, or just even have like 10 minutes to sip my tea, and like stare out the window or stand on my balcony and get some vitamin D, or something like that." AB expressed the need to constantly strategize and multitask which takes away from being truly present, while attending to her self-care needs. She shared:

> As a resident trying to continue learning and honing my skills, when I do want to take time out for wellness, my brain is like, 'Well, I could be studying, I could be learning

more.' And then sometimes, I start to think, 'Oh, how could I, you know, try and get studying and wellness in together?' And I'll tell myself, 'Those things don't go together; you do one or the other.' You know, it's like, 'Oh, I could take a walk while listening to a podcast about medicine.' And I wonder, 'Well, are you gonna remember that walk as a nice walk? Or is it just gonna be, Oh great, I got a walk in, and I got to learn.' It's just a constant inner struggle. So I think time is the biggest barrier sometimes.

Participants also shared that "awareness" of self-care practices is insufficient in mitigating burnout, as time constraints overcasts their awareness about the importance of attending to self-care practices. For example, ZP explained:

> When I started my first year of med school, I just remember having my first exam, and it was a standardized exam that was probably like 75 percent of my grade, and I just remember the sense of anxiety going into that exam and being able to like find coping mechanisms that really helped me. Part of that was meditation, and I knew exercise and eating healthy, all those things that put parameters on that. [as in mitigating anxiety]. But I feel like you kind of lose those things [as in self-care practices] when you get really busy. So, coming into residency, I gave myself pep talk. It was like, 'Okay, you need to have all these things consistent in order to keep up.' But at the end of the day, it's really hard, even if you're consciously trying to do those thing, you just sometimes don't have the time in the day. So I feel like [lack of] time, in my opinion, would be like the biggest barriers.

Moreover, in the event that participants contemplated seeking mental health support they shared feeling discouraged as getting connected to care and engaging in treatment can

"take time," and is often "an expensive process." Participants discussed the challenges of seeking mental health services when they are already "tight with time." One resident-physician shared that engaging in therapy sessions can feel as an "extra thing" in an schedules already compact schedule. In this context, ZP noted:

> I think the biggest factor [in not seeking mental health support] is that you're working 6 days a week, and really long hours… When I was in undergrad and med school, I found therapy super helpful, just having somebody that I could speak with once a week, even if it was just like the stresses of exams, or like dating a guy, and being able to like, verbalize it. As a resident, I've tried to set times to have those therapy appointments, but my schedule is so busy that sometimes it feels like such an extra thing to try to make that happen. So, I feel like there's a lot of barriers in that perspective and that you just have so little time just for yourself and like getting in those mental wellness check-ins with yourself are kind of harder to come by.

Similarly, GO expressed similar sentiments regarding the lack of time in seeking mental health support and that financial constraints can be a barrier in mental health promotion. GO shared:

> We have mental health support in terms of like, it's in our benefits [program], and you can utilize that. So if you really need help, you can talk to like a therapist… I think one of the things that led me not to use it was that first of all, it takes a lot of time, and I don't have a lot of time to begin with, but it does take a lot of time to kind of like get set up with somebody and meet with them often, and that is one thing that was making it hard. And then also, I think, after a few sessions, after, like a month of free sessions, you have to pay for it, and it's pretty expensive out of pocket. And, as a

resident, we don't make that much money, you know. So that was kind of a stressful, additional thing. I think I could see that being harder for some people… If [mental health services were] fully covered, that would be awesome, and I think more people would be using [them].

Lastly, participants discussed reluctancy in seeking support from others as they are cognizant of their time constraints as well, and don't want to be a "burden" on their colleagues. AB shared:

> I think the other barrier to seeking help is feeling like if you do ask for help, you may not get it right away, because everyone else around you is so busy, and you're always trying to be cognizant of their time and feeling like, 'Oh, I could probably figure it out myself.' You know, and you end up putting things off, and eventually there's only so many hours in a day, and the work still has to get done, so you do feel stretched.

(3) Pressure to Perform and Perfectionistic Tendencies: "You're Constantly a Little Bit on Edge, More Than Other People and Other Professions"

Participants described themselves as being high achievers, "productive," "perfectionists," and "type A personalities." Although these characteristics have served participants a purpose and helped them succeed with academic and career advancements, they shared that it has also cost them their wellbeing at times, as they tend to be overly critical about themselves, especially as they are in a field were the stakes of making medical errors are high. In this context, GO discussed:

> Most people [physicians] who go into [the field of medicine] are kind of type A personalities... so, they don't like it when something's not perfect, or they fail at something, because, you know, they've reached this high level already, and you're

helping people at like a really high level. So, any little thing that you mess up could potentially be pretty bad. I think just that environment in itself, kind of like makes you feel like you, you know you're constantly a little bit on edge more than other people, I would say, and other professions.

Similarly, AB remarked the need "to feel productive at all times," even while in resting and recovering from a long work week. She expressed:

> We're all type A personalities, we like to always be aware of what's going on and have control. I think that's something hard to relinquish sometimes, and we do that a lot with our daily lives too… it's always like, 'okay, how can I be productive and still get it all done? there should be a way everyone else is functioning,' but you know, you don't know at what cost sometimes.

Resident physicians also discussed that the "hierarchy" and knowledge gap that exists in medicine creates the feeling that no matter how much knowledge and skills they have accumulated, it is "not enough," which leads to decreased self-esteem and the pursuit of more training on their own leisure. In this context, AB shared:

> There's so much hierarchy in medicine, you know, where you are the junior doctor, and you do have seniors above you, and the seniors have attendings above them. And there's always this feeling like there is a knowledge-deficit, because I'm junior to someone else, and you feel that, there's always gonna be more that I should know, because I'm always in a position where I'm not going to know enough. Of course, every attending out there is gonna tell you that there's so much that we still don't know. But I think there is a self-stigma of, 'Well, why don't I know it? Is it probably because I don't know enough, and need to know more?'

(4) Supportive Leadership: "Even Brief Check-in Such as, 'How Are You Doing' and 'How Can I Support You' Goes a Long Way"

The importance of supportive leadership in all aspects of wellness and health promotion, including prevention and mitigation of burnout and STS, were highlighted throughout the interviews. Participants discussed that when healthcare leaders hold dialogue about wellness practices, such as addressing burnout and STS, there is less of a barrier for the individual to prioritize self-care and initiate help-seeking behaviors. They expressed that when leadership encourages residents to have lives outside of the healthcare system, it is "encouraging" and sets the "precedent." For example, ZP remarked:

> I knew that wellness was big during my interview with [the healthcare system] … They [leadership] were like, 'Hey, we really want you guys to have a life outside the program and we encourage it,' and they talked a lot about it, about like fatigue during our orientation. I think that was important as transitioning from a med student to a resident; you don't really know how fatiguing it can be until you're in the situation. And so [leadership] talked us through it… gave us a scenario when [they] fell asleep at the wheel, because of being so tired… and encouraged us to take an Uber (and be later reimbursed) if we ever felt that way, and like not to worry about it. So, things like that, it's talked about, it's like when the very top people in the residency programs are encouraging it, there's less and less barriers to those things [like prioritizing self-care].

AB also discussed the importance of leadership setting the precedent for wellness practices through regular meetings that foster open dialogue. She expressed that when

healthcare leaders provide an opportunity for dialogue, it provides a sense of "being cared for" and that "our voices are being heard." She shared:

> I think one thing that our program has done really well is having feedback from the residents themselves about a rotation, about faculty, and about senior residents. So, the whole notion of evaluations and having that blank text box at the end where it says, 'Okay, what are your comments? What are your thoughts about this?' has really given us a lot of reign to discuss how we're feeling about anything and then knowing that, our evaluations are going to be read, and our voice is going to be heard. So, having more of that open communication between a junior and a senior level resident, or even a faculty member has been a tool that has really helped us voice some of the concerns we have. That being said, we actually have many meetings, like we just had a meeting today where [leadership] had the floor open for the majority of that meeting, and asked, 'What concerns do you have?' I'm always shocked as to how many people just start speaking up, but it's that ease and that ability to know that your voice is going to be heard, and there are opportunities for you to voice those concerns. I think those tools [like open dialogue] can be really used in promoting wellness, identifying burnout, and talking about what is important to you, and how you're feeling about something.

Key-informants shared that leaders in healthcare systems are analogous to parents in the family system. In this regard, NO expressed that leaders should have the foresight in recognizing when their staff are overworked, and intervene when necessary to prevent burnout, which can lead to potential medical errors, turnover, and loss of revenue in that organization. She shared:

> It has to come from your parents, because your parents are going to tell you that you're overtired when you're obviously bouncing off the walls. Now, you don't feel overtired, you feel like you could party and scream all night long, but you're four [years old] and so your parent have to come and say 'Baby, I know you want to play, and this is what you're going to do now, you're going to go to sleep.' Like this is what we need people [as in leaders] to help us see in ourselves, and if the mirror that we have is that we're slackers, or that we're liars, or that we're working the system, then we will grind ourselves to dust.

Participants further expressed the importance of supportive leadership in promoting their mental health and wellbeing. ZP shared that when leaders provide even brief check-ins such as, "How are you doing?" and "How can I support you?", it provides a sense of being valued and cared for by the organization. Additionally, participants shared that when attendings check-in with their residents, it also helps mitigate their anxiety levels, especially, when working with complex patient profiles and when the stakes are high. ZP discussed:

> [Our leadership] literally asks us every week, 'How are you guys doing? What can we do to improve it?' They are very much in touch with us and have created a culture [of wellness] from the get-go, that they want us to share when we have suggestions, when we have issues going on, not really a venting session, but just like to express what's going on in each of our rotations, and it doesn't have to be a negative thing. It could be like, 'Hey, I had this really cool case, and you know, I had a great time interacting with [this] family.' Or it could be just like, 'Hey, I think we need more support on this rotation, you know, these are my suggestions.' So that kind of contact with our [leadership] has been amazing, I feel very lucky to have that. So, if you're feeling like

you're struggling to ask for help, or you have a question about a certain patient, you always feel like you can ask those questions. I could imagine though that if I was isolated, a new intern, and didn't have that access to chat with an attending or have check-ins, tit would feel very scary, as there can be a lot of anxiety and stress that comes with caring for patients. I think communication is a big thing, and I'm thankful I have that.

Similarly, AB shared the importance of feeling "comfortable" with attendings, senior residents, and the medical faculty and how approachable they are in terms of talking to or reaching to out with questions. She shared:

I think peer pressure is always probably the biggest driver of a lot of the decisions we make in medicine, but I think it also comes down to how comfortable you feel, and how comfortable your senior residents and your faculty make you feel in terms of approaching them. And I think that has to be spelled out in the beginning as to how open and welcoming they are to you, coming to them with just about anything.

Moreover, supportive leadership not only boosts workplace morale, but also encourages resident physicians to grow within their roles. Participants expressed the significance of providing constructive feedback and positive reinforcement in promoting their sense of self-efficacy, which in turn, encouraged their professional growth. In this context, ZP shared:

I think medicine has a lot to do with who you work with, and if you're attending is toxic, then you're not going to want to come to work every day because you don't, you're not going to have any motivation. Like part of my motivation as being a very type A person is getting that feedback, like, you get that one line of an attending,

saying, ‘Hey, you did a really great job today.’ Like, that literally will push me into the next day and gives me energy like, ‘Great, I'm doing a good job, keep going.’ And every day you learn a little bit more. I can imagine that if I had toxic attendings, that would be like, ‘I can't believe you didn't know that,’ or, like ‘Do better at this,’ I would focus on the negatives and that can be such a burnout mechanism.

ZP further discussed the embedded hierarchy that exists in medicine and the importance of having leaders that “cheer you on,” and are collaborative in including resident physicians in higher order decision-making process. Specifically, participants shared that it is essential to have leaders that are invested in residents’ growth. They further noted the importance of feeling “safe,” “open,” and “vulnerable” with their supervisors regarding how patient care may be affecting them. For example, ZP stated:

I think the power dynamic [between residents and attendees] feels like sometimes they treat you as an equal, but that power dynamic in other residency programs is not always like that. Obviously, they are attendings and so we treat them, like you know, they’re above us, but there are some attendings that ask you, ‘what do you think? what's your plan?’ And then you chat as a group, versus an attending that’s just like ‘this is our plan, this is what we're gonna do. We just want you to put in the orders and be the workforce, and we don't really care what you think about it.’ And that power dynamic can keep that communication from going, because if you're scared of your attending and they're just kind of flippant and toxic, then you're not going to seek them out for support. You'll go to someone else, or you know for some residents, they might be using alcohol or engage in other toxic behaviors to cope with those things, when it could just be communication, like, ‘Listen, I'm scared about this patient, not sure what's going on. It's really stressing me out. What do you think?’ Like,

even just having a conversation like that, could be so helpful to a resident. But if you don't have that communication, it could be really hard.

Culture of Health Promotion and Resilience in Healthcare Systems

RQ 1. b) What are resident physicians' and key-informants' perspectives on what a culture of health promotion and resilience would look like in healthcare systems, and how to achieve it?

Participants were asked to provide recommendations for organizations regarding key elements to prevent burnout and STS and to promote resilience among healthcare providers, based upon on their own experiences. Participants highlighted a number of elements related to organizational action that could improve the wellness culture of a healthcare system and towards instilling a trauma-informed healthcare system. Table 2 summarizes the key recommendations made by participants.

Pilot Wellness Programming for Resident Physicians

RQ 2. What are resident physicians' experiences of participating in a pilot testing of the TOTS wellness programming, its acceptability, and its implementation?

Resident physicians participated in TOTS wellness programming and answered research question 2. They rated the TOTS programming as "agree" or "highly agree" on the following 5-point Likert scale: TOTS programming meets my approval, TOTS programming is appealing to me, I like TOTS programming, I welcome TOTS programming, TOTS programming seems fitting for me, TOTS programming seems suitable for me, TOTS programming seems applicable for me, TOTS programming seems like a good match for me. The qualitative post programming semi-structured interview with resident physicians further expanded on their ratings and how they experienced the TOTS wellness programming.

Resident Physicians shared several key themes regarding the programming they received, its feasibility, and its implementation. They also provided recommendations for future wellness programming in residency training programs as well as healthcare systems as a whole. The three key themes that emerged included: (1) the importance of receiving psychoeducation about burnout syndrome and how that may present in resident physicians, (2) relevance of psychological first aid (PFA) for resident physicians and its implementation in training programs, and (3) a shared sense of camaraderie with peers and co-creation of wellness culture with both resident physicians and healthcare leadership.

Psychoeducation: "Identifying What the Signs of Burnout Are and What to Look for in Others Who Might be Suffering from It"

Psychoeducation about mental health, burnout syndrome in healthcare providers, chronic and secondary trauma were core element of the wellness programming. Participants shared the importance of being reminded of how providers' mental health could be impacted as a result of burnout syndrome. AB shared, "I think the whole session was fantastic. For me, a junior physician, it was great because [TOTS wellness programming] went into identifying what the signs of burnout are, and what to look for them in others who might be suffering from it. So, I really appreciated that." She further, shared that psychoeducation on the impact of compassion fatigue and workplace burnout was helpful in becoming more self-aware. In this context, AB expressed:

> I really appreciated learning more about burnout itself… I think people really relate to those signs and symptoms [of STS, chronic stress, and burnout], especially how it applies to us in a healthcare setting. I think that was the most valuable thing for me, just realizing, 'Yeah, like, I am feeling more negative, I am snapping back at my

loved ones more because I'm tired, and I don't have patience.' I think that's something that everyone can resonate with.

Similarly, ZP discussed that psychoeducation and the skills learned during the TOTS wellness programming provides the opportunity to be more "introspective" and be able to readily identify how issues such as, "chronic stress," "compassion fatigue," and burnout may be impacting one's wellbeing. She expressed:

> I think when you have those skills [such as awareness and psychoeducation about burnout syndrome and STS], you can also be a little bit more introspective on when it's happening to you, and [recognize] when you're the person that needs support. Maybe it becomes a little bit more normalized if we talk about it, say in orientation, and people have it in the front of their mind. I would be able to recognize like, 'Hey, listen, maybe I haven't really heard from my friend, and she seems kind of down, and she's a little bit tearful today, maybe, you know, I feel like I am enabled by this training to check in with her.'

Further, participants discussed the importance of dialogue and psychoeducation about mental health in the workplace. Specifically, they shared finding that learning about risks and protective factors regarding secondary trauma exposure and burnout was helpful as it provided a "barometer" of their own wellness. AB noted:

> I think that dialogue about the risk factors and the signs of burnout are really important. I think what you're doing with this whole program and creating ways for us to present that to [incoming residents] is important, because sometimes people think that they don't qualify in these certain parameters of what stress or burnout

really is, so knowing at least where to start and just kind of introspectively start thinking about it is important.

PFA Training for Resident Physicians: "… That Methodology of How to Really Approach Someone Who's in a Bad Place, or… in a Sensitive Situation Was Helpful"

Participants discussed the relevance of PFA for resident physicians and their desire to see this evidence-informed intervention adapted for resident physician in future training programs. They expressed that PFA provided them with tools that could be useful in the role of peer-support. In this context, AB shared:

> I really liked that we were able to learn about psychological first aid. I think that methodology of how to really approach someone who's in a bad place, or you know, is in a sensitive situation was helpful.

GO also found PFA training relevant to the experiences of resident physicians in peer-support roles. She expressed finding PFA suited in counseling peers with "open-ended questions" and "without making them feel uncomfortable." Similarly, ZP expressed that being able to support residents "in the moment" is an important skillset she acquired from the TOTS wellness programming. She expressed that PFA's second core foundation, which is *establishing connection*, provided her insight on "how to just be there for somebody and be present…" She added that practicing basic counseling skills embedded in PFA (e.g., active listening, empathy, validation, etc.) provides resident physicians with a sense of preparedness and self-efficacy as they encounter potentially distressed residents in the future. She further added, "It will be really helpful to know how to [support a distressed resident], and I think to do it in the most respectful way… you're just there to be present, and not forcing somebody to do something, but just in a way that they feel they have support."

Additionally, there was a general consensus about having more "case vignettes" and "role playing" to enhance programming and participants' learning. GO stated, "Even though people don't like [role playing] in front of other people, I think it would be the next step to learning… I think we could spend a little bit of time where we could role play the situation and have more like 'Yeah, I can, I can do this with my peers.' AB also suggested a follow-up workshop with various simulations in getting practical and hands-on experience with the core elements of PFA. She suggested:

> Having another workshop where we as peer support mentors, start to utilize or have scenarios where we're in these simulations with other possible residents and kind of work on how we'd approach one another [would be helpful]. Because sometimes the cases and what people are going through are so unique that you're a little spellbound or speechless by what they're telling you. And I think I can apply that to even patient care, too.

Additionally, ZP added that embedded opportunities for role plays within TOTS wellness programming will help streamline how to have conversations with peers who are distressed, and overcome potential "awkwardness" that resident physicians may experience in a peer-support role. She shared:

> I think of [role play], like the way in medicine when we do codes, the more you physically do it [the easier it gets], and same goes. with role plays… it's just like acting it out, like, 'how would I express it? Does it feel really awkward?' I always feel like talks like that [related to mental health], feel awkward. For example, when giving bad news to a patient, like the first time you do that is not going to be super slick… it's not going to feel like 'Oh, that was easy.' You know, the more and more

> you do it, the easier it becomes, and you feel you have the language to properly do it. You've been through different versions of when somebody isn't receptive to it. 'How do I go past those barriers?' If someone isn't super receptive, or maybe someone is completely receptive…, so I think role playing would be helpful. I can't really think of other way to do it.

Lastly, given existing time constraints, GO suggested truncating the TOTS wellness programming and incorporating a single training session on adaptations of PFA for resident physicians in a peer-support role. She expressed:

> I wish there was a little bit more time spent on like, actually the instruction of becoming the peer-support person… It seems we were missing some of it and there'd be time for like more [training] in the future, but I wish we could have just smashed it all into one session, and kind of felt like, 'Oh, okay, I can, I'm certified as like a peer-support person now, and I'm like, ready to do this at this point.'

Perceived Sense of Camaraderie and Co-creation of a Wellness Culture in the Organization: "To Have [Leaders] There and For Them to Actually Have Very Similar Ideas As Us Was Pretty Fascinating"

Participants shared enjoying being in an in-person space with other peers and participating in "brainstorming activities" pertaining to health promotion and wellness within their organization. GO expressed enjoying the process of writing their ideas on improving the culture of health and wellness in their organization "without putting too much thought into it," and discussing ideas as a group. Similarly, AB stated, "I liked how we worked together as a team to really come up with a list of problems, right? There is this huge umbrella of

burnout, but what does that really mean specifically in our program? And what are we really feeling?

Participants shared a general consensus regarding the camaraderie experienced during programming. One aspects of the TOTS wellness programming that they enjoyed the most was "to be in the presence of other peers," "connecting with peers," and "hearing others' perspectives." GO shared:

> We somewhat know each other [as in other residents], like seeing them in the [healthcare system] here and there, but the programming was actually my first-time meeting one of the residents who's really nice and an awesome person, but we don't always run into each other, being in the different residencies.

GO also remarked that the process of co-creation and group work would have been enhanced if colleagues had established a prior sense of connection or comradery prior to attending the TOTS wellness programming. She shared experiencing "mental blocks" at times when she was brainstorming ideas for co-creation of health and wellness practices in their organization, and attributed that to possibly not knowing her peers well enough. She shared:

> … For instance, my partner that I had [during TOTS programming's group activities], I didn't really know [them] and I think both maybe on [their] side and my side there was a little bit of hesitancy to really share a lot in that situation, but we did try. We tried our best, and I think we did pretty good. I think maybe that's something that in the future we could think about. Just how we could maybe do more solo stuff, and then somehow bring the whole group together to talk about it.

Additionally, participants expressed that having both residents and leadership in the same space along with a group of mental healthcare providers and researchers who are experts in the field was desirable. Having both trainees and leadership attend programming strengthened their connections as it was a reminder that their values on workplace health promotion and wellness are aligned. In this context, AB expressed:

> What I thought was really smart that you all did was to have us residents there of course, but then to have the higher levels like [leaders], and then yourselves. Of course, you bring a very unique perspective to all of this as well. I thought it was really good to have problems identified by different groups of people. And then, that went for the solution finding as well. I think you know, we worked together as residents to come up with ideas for, 'Okay, how do we actually implement these ideas for wellness?' And to have [leaders] there, and for them to actually have very similar ideas as us, was pretty fascinating, at least to me, and like, 'Okay, we're all kind of on the same page here.' We all want the same thing, so you know, those were the aspects of the training that I thought were great.

Lastly, participants emphasized the importance of continuity of programming to ensure sustainability of wellness practices, institutional changes to the workplace wellness culture, and capacity building. GO remarked:

> This [TOTS wellness programming] dialogue is a really good place to start. We're planning on having this program a more sustainable program, so it's not like a one-time workshop situation. We're trying to figure out how we could do this in a sustainable way where we could build capacity over time.

CHAPTER FOUR: DISCUSSION

It is vital to address organizational factors in preventing burnout and STS in physicians and to foster an organizational culture that prioritizes physicians' mental health, and wellbeing. Recent studies have illuminated that physician suicide is the "silent epidemic" (Bhatia et al., 2023) with more than 400 physicians taking their lives annually and that physicians are experiencing increased rates of anxiety, depression, and burnout (Stehman et al., 2019). The current study contributes to the literature by providing new information about organizational factors related to addressing burnout and STS in physicians. Further, this study elucidates the barriers that resident physicians face in prioritizing mental health and help-seeking behaviors, as well as facilitators to health promotion. Lastly, pilot testing of TOTS wellness programming was implemented to assess acceptability among resident physicians. Qualitative methodology, in particular CBPR, allowed this study to center the voices of key-informants and resident physicians themselves, in understanding unique challenges working at the frontline of COVID-19, and understanding barriers as well as eliciting recommendations on implementing trauma-informed practices aimed at centering physician wellbeing in healthcare systems. Several key findings are discussed in the following text.

First this study emphasized the short-and long-term impact of working as a frontline provider during COVID-19 and pointed to organizational factors that participants experienced as playing a significant role. A recent review examining the impact of COVID-19 on physicians' psychological health found an alarming rise in psychological distress, moral injury, cynicism, uncertainty, burnout, and grief among physicians during the pandemic. Poor institutional services potentially led to physicians' crumbling wellbeing

(Guraya et al., 2023). Further, another study examining differences in the long-term impact of COVID-19 on the mental health and professional quality of life of resident and specialist physicians found that that 5 to 20% of a sample of physicians still showed the effects of the adverse psychological impact of the pandemic, and more than half of them experienced compassion fatigue (Delle Donne et al., 2023). Those with fewer years of clinical practice might be at greater risk of burnout, anxiety, and stress and might develop a lower level of compassion satisfaction. Moreover, the factors that potentially contribute to poor mental health, compassion fatigue, and compassion satisfaction seem to differ between residents and specialist physicians (Delle Donne et al., 2023). Guraya et. al (2023) highlight the importance of remediation of the deteriorating mental health of physicians responding to COVID-19, and that a restoration of medical profession's advocacy and equity should be prioritized by organizations.

Second, this study highlighted the importance of incorporating a structural lens in completing the stress-response cycle in frontline healthcare providers, including physicians who are operating during high and chronic stressful conditions of a global pandemic. There are several key factors in closing the stress-response cycle as outlined below: First, this study emphasized the importance of flexibility around organizational policies in responding to a global pandemic. Organizational practices can mitigate the cooccurrence of burnout and STS in physicians by controlling workload demands. For example, organizations that promote balanced work cultures that reinforce time off as a form of self-care allow providers to recover from physical and psychological fatigue (Umeda et al., 2020), which is essential during a prolonged global pandemic, such as COVID-19. In particular, taking time off in the aftermath of a disaster response can create a much-needed transition between disaster-

response mode and routine mode, which could support provider well-being and improve patient care (Umeda et al., 2020). Second, policies that minimize burnout and exposure to STS also enables a sense of connectedness to peers has the potential to optimize psychological wellbeing in frontline responders in disaster response (Thormar et al., 2013). Corroborating prior studies, the current study also highlighted that holding groups where regular and frequent debriefing with colleagues occur likely enables the opportunity to process STS, build comradery, and sense of community with colleagues, which in turn are significant factors in buffering against STS (Alavi et al., 2022; Brooks et al., 2016). Aligned with these recommendations, previous studies have found that perceived sense of comradery in disaster response also leads to reduced distress in first responders and serves a mental health protective factors (Brooks et al., 2016; Ursano et al., 2014). Lastly, key-informants and resident physicians both highlighted the importance of holding an anniversary or a national day dedicated to recognize healthcare providers at the frontline of responding to COVID-19. A dedicated day (similar to the remembrance of the September 11th terrorist attacks or Hurricane Katrina), can be memorialized as a meaningful time to pause and reflect on the shared collective trauma that frontline healthcare providers experienced during COVID-19, as well as an opportunity to recognize colleagues who sacrificed their lives for patients and those who lost their lives. There is limited research, however, examining the effectiveness of holding anniversaries for shared trauma events and its potential for collective healing and growth, possibly due to the limited understanding and the poor conceptualization of these concepts as they are values centered in collectivistic cultures (Ali et al., 2021).

Third, this study also corroborates past studies on physician mental health and wellbeing by signifying the role of internalized stigma related to mental health in seeking

support (Busireddyet al., 2017; Carrau & Janis, 2021). Resident physicians noted that factors, such as the fear of appearing "incompetent" and social desirability, are all vital contributors in seeking support from support from peers, supervisors, and colleagues. They suggested strategies to mitigate internalized stigma, such as witnessing their senior colleagues and supervisors voicing challenges related to mental health, burnout, and STS, creates a sense of safety to be vulnerable in professional spaces, and connectedness with other physicians. The idea that "it's okay to not be okay" was mentioned several times across the interviews among both key-informants and resident physicians, which also highlights the salience of internalized stigma as well as internal pressures that physicians place on themselves to be "perfect" and perform with "excellence." Research has shown that unhealthy or maladaptive perfectionism can contribute to physician burnout (Wong, 2020) and associated with negative mental health outcomes. A recent study indicates that medical culture can train for and/or exacerbate existing characteristics, such as maladaptive perfectionism and imposter syndrome, which in turn may impact professional identity formation and contribute to distress (Thomas & Bigatti, 2020).

A fourth finding of the study was related to working with supportive leadership and attendings. Participants shared that supportive leaders who are intentional and vigilant about checking-in with physician trainees, create a sense of being cared for and valued by the organization. Likewise, previous research shows organizational support through supportive leadership can instill a sense of belonging in the workplace, increase retention, and boost morale (Luthans, 2000), while lack of support has previously been identified as an important stressor affecting healthcare providers. Further, multiple recent publications have called for leaders and supervisors to be trained to recognize symptoms of burnout and mental illness,

support staff mental health, and promote a respectful atmosphere where mental health is prioritized (Brooks et al., 2015, 2020; Quevillon et al., 2016).

Fifth, although the current study highlighted the common sentiment that physicians in general are strapped for time, residents in particular shed light on how time constraints are a significant barrier to prioritizing self-care, mental health, and wellness practices. The Accreditation Council for Graduate Medical Education (ACGME) requires all programs to limit resident work hours to 80 hours per week with some programs allotted an extra 10 per cent for specific educational purposes (Cockerham et al., 2004). Although the policies regarding resident physician work hours are constantly being evaluated and changed; the results of randomized control trials (RCTs) are mixed (Sephien et al., 2023). A systematic review and meta-analysis found that a shorter shift length compared with longer shift length was associated with significantly less emotional exhaustion and less dissatisfaction with overall well-being, sleep duration, and sleepiness (Sephien et al., 2023). These findings may inform the policy change in support of reduced shift hours resulting in overall well-being for the residents with possible reduction in burnout without adverse impact on patient-based outcomes (Sephien et al., 2023).

Sixth, resident physicians noted financial constraints as another barrier to prioritizing mental health services and wellness activities. With increased attention on the federal budget deficit, graduate medical education (GME) funding has in particular been targeted as a potential source of cost reduction (He et al., 2021). Reduced GME funding can further deteriorate the compensation of physicians during their residency training as noted by resident physicians in the current study, which can make it difficult to pay for psychological services beyond what the limited number of sessions that their trainings program provides.

Resident physicians noted a significant imbalance between the number of hours they work and their compensation, which can also create a notion that residents' work has less of a value.

Seventh, there was a general consensus about the acceptability of TOTS wellness programming for resident physicians. In particular, findings from this study noted that mindfulness practices, psychoeducation about burnout syndrome and its presentation in physicians, PFA training, and the opportunity to be in-person with other peers were effective. Past research has demonstrated that effective wellness interventions for resident physicians also use educational theory to guide program development, surveyed participants to guide intervention design, and recruited voluntary participants (Eskander et al., 2020). While it is not clear which component of the TOTS wellness programming was most effective, results of this study noted a desire for adaptation of PFA specifically for resident physicians. Such adaptations include incorporation of case specific vignettes and simulated roll plays that are relevant to the daily activities of resident physicians, especially when confronted with identifying distressed peers, colleagues, and patients. While PFA has been recommended to healthcare staff during the COVID-19 pandemic (Asaoka et al., 2023), there is lack of evidence on its adaptation for healthcare providers such as nurses (Schoultz et al., 2022), physicians, and other medical staff, and this study is the first to suggest specific adaptions to its curricula and calls the urgent need to conduct studies which evaluates the outcomes of PFA in healthcare providers, including resident physicians.

Clinical Implications

This study has important clinical implications, given the distressing and unprecedented context of acute patient care during COVID-19, and its potential for both a

short-and long-term emotional toll and cost to physicians, their patients, and organizations. This study's findings inform the ways that organizations can better prepare to be trauma-informed and create cultures of wellness and thriving for their physicians.

Self-reported burnout and STS in physicians is likely underreported because of stigma against mental illnesses, stigma against themselves, social desirability, and growing concerns that disclosure may impact their medical license (Ventriglio et al., 2020). Among healthcare providers, including physicians, certain personal characteristics and work demands (e.g., being calm and emotionally collected, acting on logic over emotion, enacting emotional self-control) are likely to impedes help-seeking behaviors and psychological support (King et al., 2010). In many cases, physicians choose to self-medicate with prescription medications, alcohol, and a range of other substances in lieu of seeking psychological services (Ventriglio et al., 2020). It is important that healthcare systems respond promptly, adequately, and sensibly to the needs of physicians in distress, which if not addressed in a timely manner, may lead to a public health crisis, especially given the predicted shortage of up to 122,000 physicians by 2032 in both primary and specialty care (Ahmed & Carmody, 2020). Organizations have a moral responsibility to care for the wellbeing of their healthcare providers and take necessary steps to create safe, supported, and accessible opportunities for physicians to receive mental health care.

A recent systematic review demonstrated that interventions using both peer support and individual meditation enhanced well-being in resident physicians (Eskander et al., 2020). Further, intervention categories, such as meditation or relaxation strategies, resilience skills, mentorship, and formal curricular interventions consistently improved resident wellness, promoted community building, and self-help (Eskander et al., 2020). Additionally, a

proactive approach to well-being through training, peer, and organizational support will not only benefit physicians, but also the patients who utilize their services each day.

Other interventions aimed at addressing physician burnout and well-being include the Psychological Interventions with Elements of Mindfulness (PIM) (Temet et al., 2021) and resilience training (Seo et al., 2021). A systematic review examining mindfulness-based interventions in addressing physician's mental health demonstrated that PIM is associated with positive impact on empathy, well-being, and reduction in physician burnout (Temet et al., 2021). Resilience training is an emerging area of medical education that may be of benefit to medical trainees, yet merits further investigation as there are currently no standardized, efficacy-proven resilience curriculum that could be implemented in medical and residency training programs (Seo et al., 2021).

Furthermore, results of the current study also support prior research highlighting the importance of debriefing practices during and in the aftermath of critical incidents, such as patient deaths in disaster response (Alavi et al., 2022). Despite the scarcity of studies analyzing the efficacy of PD, the current evidence suggests not to endorse it as a form of treatment or prevention of posttraumatic symptomatology. In addition, while debriefing is primarily intended to build protective factors through psychoeducational strategies, it may not adequately address physicians' acute reactions to trauma, especially in response to a global pandemic.

The current study yields preliminary results on the acceptability of PFA for resident physicians, which corroborate a systematic review examining the efficacy of PFA in the general population (Hermosilla et al., 2023). However, to our knowledge PFA is not

systemically adapted for physicians and the unique challenges they face in the provision of health services and also when confronted with a global pandemic.

The current study draws attention to the culture of health and mental health for physicians working at a healthcare setting. Understanding the lived experiences of physicians responding daily stressors of providing patient care in addition to operating during a global pandemic, and the factors that influence their mental health and well-being is imperative to inform future interventions. In addition, current interventions are often solely focused on the individual, and neglect to take into account, or attempt to alter, systemic factors at the organizational level that impact physicians at the frontlines of responding to a global pandemic. Investigating organizational factors that may predict physicians' outcomes, including physical and mental health, burnout, and STS, fills an important research gap.

Strengths and Limitation

This study made a distinctive contribution to the literature because of utilized qualitative methodology to examine how key-informants in the medical and mental health profession and resident physicians, a population that has been empirically overlooked, envision healthcare systems that are trauma-informed and centers physicians' health and wellbeing at the forefront of their agenda. It presented some of the nuanced ways that physicians experience workplace burnout and secondary trauma, and the common barriers and facilitators to health promotion and well-being.

A strength of this study was first, the community-academic partnership with community-serving organizations and healthcare systems. This collaborative effort delineated

key community priorities related to mental health and wellbeing, which formed and developed the current study from the group up as key-informants with expertise in the field of physician burnout, wellness, and mental health were able to co-design the study, research questions and research protocol. A second strength of the study was the ability to conduct interviews with both key-informants and resident physicians and obtain the perspectives of both seasoned healthcare providers and physician trainees on factors impacting burnout, STS, and physician well-being, as well as organizational strategies in implementing a wellness culture in healthcare systems. Third, aligned with a CBPR approach, the research team, community partners, and key-informants co-created the TOTS wellness programming through several iterations, and specifically adapted it for resident physicians, which likely increased the acceptability of programming. Lastly, the study's use of in-depth 45-60-min, semi structured interviews, trauma-informed principles for research, and data analysis enabled the collection of rich qualitative data centered around participants' own experiences and opinions. Rather than simply noting themes, the study explored them in depth. All participants expressed appreciation for the opportunity to participate in interviews, and many noted the importance of the topic to their own lives.

There were several limitations in the current study as well. First, the most notable limitation was the small sample size of resident physicians who participated in TOTS programming and the follow up interviews. There were several potential reasons regarding recruitment difficulties, which contributed to the small sample size. These challenges were primarily related to the difficulty in gathering all resident physicians together during the same time and date due to their responsibilities in attending patient care and pressing clinical matters during the day of programming, which hindered at least five other resident physicians

and prevented them from attending TOTS wellness programming. Additionally, there were significant scheduling challenges related to residents' time constraints, as well as inclement weather which caused programming to be rescheduled multiple times before it occurred.

Second, demographic variables are not linked to participants' narratives. This was a deliberate decision based upon consultation with key-informants, community partners, and healthcare leadership to ensure participants' anonymity. However, linking demographic data, such as age, gender, and year of residency program, could yield important quantitative data on their association with burnout and STS and illuminate potentially mediatory and moderating factors against burnout and STS. Further linking resident physicians' area of specialty to their narratives could further solidify understanding of which areas of specialties within medicine are most challenged with experiences of burnout and STS, which could elucidate how wellness programs should be adapted further for subspecialized physicians.

Third, the TOTS wellness program for resident physicians occurred with both resident physicians and healthcare leadership in the same session, which may have created potential discomfort for resident physicians to disclose information, due to the innate power dynamics between trainees and seasoned physicians who also served as attendings. However, the decision to include healthcare leaders in the same programming as resident physicians was advised by community partners, healthcare leaders, and key-informants. Fourth, due to the stigma around mental health within healthcare providers, it is possible that some resident physicians with valuable perspectives may have declined to participate in the TOTS wellness programming and follow up interviews despite procedures to protect confidentiality.

Conclusion and Future Directions

The current study utilized CBPR to examine organizational factors in preventing burnout and STS in resident physicians, ways to promote a culture of wellness in healthcare systems, and to design and implement pilot testing of TOTS wellness programming in a sample of resident physicians. Results shed light on the short-and long-term mental health sequelae associated with COVID-19 and suggests that flexibility in organizational policies related to Protected Time Off (PTO), debriefing in groups, perceived sense of camaraderie, supportive leadership, and national recognition of physicians responding to COVID-19 are salient factors impacting physicians' well-being during a global pandemic. Further, results highlighted the importance of addressing internalized mental health stigma among physicians, time constraints, workplace pressures, and supportive leadership in residency training programs.

A combination of individual and organizational-based approaches aimed at preventing burnout and STS should be evaluated to assess their potential to prevent STS and burnout and support resilience among physician trainees. Effectiveness studies of TOTS wellness programming are needed to evaluate whether this programming is effective in addressing burnout, chronic stress, and STS in physicians, and to specifically evaluate which component of programming (e.g., mindfulness, psychoeducation, PFA training) were most relevant and applicable to the experiences of resident physicians. Further, sustainably of wellness programs such as TOTS should be evaluated to determine whether it has long-term impact on fostering a culture of wellness in organizations that participated in the program. Longitudinal research is needed to streamline existing wellness programs and design effective strength-based resilience interventions to support their physicians' psychological well-being over time.

Additionally, future studies are needed to evaluate both the efficacy and effectiveness of PFA. Whilst behavioral, knowledge and system impact of the PFA training are promising, methodologically stronger evaluations which include systematic training adaptation and selection of sensitive outcome measures is needed to strengthen future implementation of PFA training (Wang et al., 2021). Cross-sectional research is needed to inform how healthcare systems can adapt and implement PFA for their healthcare staff.

In addition, physicians are a unique population as they are often accustomed to providing care and attend to the needs of others. Future studies are needed to determine the barriers and facilitators in help-seeking behaviors among physicians. Empirical studies are needed to examine psychological services in order to adequately address burnout and STS in physicians in general, as well as those in the frontline of responding to global pandemics. Future research in this area is pressing, as collective crises such as climate-change related disasters, and pandemics increase in frequency and severity, putting extra demands on physicians and the healthcare systems that employ them.

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APPENDICES

Appendix A. Semi-Structured Interview Protocol (Key-Informants)

1. Briefly tell us about your organization. (probes: background/history, vision/mission/values, current activities, main focus and outlook for next few years)

2. What is it like to work at your organization? (probes: what are the roles and responsibilities? What are the pressures and expectations? What are the rewards?)

3. What are the biggest challenges your organization is currently facing (probes: challenges to provision of services, challenges related to staff/organizational concerns).

4. What are the biggest challenges your staff is facing related to their own wellness/burnout/compassion fatigue/workplace satisfaction? How do you know about these experiences? (probes: how do the challenges change related to role in the organization?)

5. Tell us more about the ways you address organizational and individual wellness currently. What would you like to add/change about what is already available to your staff? (probe: what do you hope to gain/ideal outcome from our partnership?)

6. What is the best time for you to devote attention to this effort? (probe: any times that don't work?) How can we build on your schedule and structure to involve the leadership and staff in your organization? How can we best address challenges (e.g., lack of time, other demands, remote work, sustainability).

Appendix B. Ethnographic Observations Template

Notable Observation:

Engagement: spoke about a related topic, eye contact, supportive statement to another group member, taking with group leader, talking with group member, reciprocal communication, asked group leader question, ask group member question, participates in activity, interacts with other during activity, volunteers during activity

Disengagement: made off-topic comment, no eye contact, talking while others are speaking, not paying attention

Disclosure: talks about self, family, patient care, feelings or other sensitive/personal information

Disruptive Behavior: interrupts others, invades the space of other group members, refuses to participate

Organization: **Date/ Time:** **Group Session #:**

Group Leaders:

Group Members:

Group Activities/ What they did:

Behavioral/ Relational Observations:

Post-group Memo/Impressions/Themes:

Appendix C. Pre-Programming Survey

Please describe:

1. What are the challenges related to staff burnout and wellness that your organization is trying to address?

   _____
   _____
   _____
   _____

2. What tools (if any) do you currently have to address these challenges in your organization?

   _____
   _____
   _____
   _____

Appendix D. Acceptability of Intervention Measure (AIM), Intervention Appropriateness and Measure (IAM)

GENERAL INSTRUCTIONS: These measures could be used independently or together. The IAM items could be modified to specify a referent organization, situation, or population (e.g., my clients). Please check and report the psychometric properties with each use or modification.

Acceptability of Intervention Measure (AIM)

	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
1. TOTS Programming meets my approval.	①	②	③	④	⑤
2. TOTS Programming is appealing to me.	①	②	③	④	⑤
3. I like TOTS Programming.	①	②	③	④	⑤
4. I welcome TOTS Programming.	①	②	③	④	⑤

Intervention Appropriateness Measure (IAM)

	Completely disagree	Disagree	Neither agree nor disagree	Agree	Completely agree
1. TOTS Programming seems fitting to me.	①	②	③	④	⑤
2. TOTS Programming seems suitable for me.	①	②	③	④	⑤
3. TOTS Programming seems applicable.	①	②	③	④	⑤
4. TOTS Programming seems like a good match for me.	①	②	③	④	⑤

Pragmatic Qualities:

- Readability tested by substituting "This EBP" for "Insert Intervention." Flesch reading ease score (and grade level) is 95.15 (5th grade) for AIM, 99.60 (5th grade) for IAM, and 94.17 (5th grade) for FIM.

- No specialized training is needed to administer, score, or interpret the measures.
- Cut-off scores for interpretation not yet available; however, higher scores indicate greater acceptability, appropriateness, or feasibility.
- Norms not yet available.
- Scales can be created for each measure by averaging responses. Scale values range from 1 to 5. No items need to be reverse coded. Good measurement practice: assess structural validity to confirm the unidimensionality of each measure and calculate alpha coefficient to ascertain reliability.
- There is no cost to use these measures.
- Time to complete: less than 5 minutes per measure.

Note: The current study used AIM and IAM segments of the survey.

Appendix E. Post-Programming Qualitative Survey

Please describe:

(1) **Which challenges in your organization did this program help you address? (Please be specific about how these challenges were addressed)**

_____
_____
_____
_____

(2) **What were the valuable lessons and tools from today's program?**

_____
_____
_____
_____

(3) **What did you enjoy about today's program?**

_____
_____
_____
_____

(4) **How can today's program be improved?**

_____
_____
_____
_____

(5) **Any recommendations for future programming?**

_____
_____
_____
_____

We appreciate the feedback we receive. Thank you!

Appendix F. Semi-Structured Interview Protocol (Resident Physicians)

Thank you for participating in this interview. Your participation is an essential part of this project. We're interested in learning more about your experiences as a health care professional.

Do you have any questions before we begin?

1. **Demographics: Tell me about yourself – what is your age, gender, race, ethnicity, occupation, and how long you have been working in healthcare?**

2. **Barriers and Facilitators to Proactive Help-Seeking Behaviors**
   a. What prevents you from sharing your concerns with supervisors and co-workers?
      i. Probe: concerns related to burnout, compassion fatigue/ STS, moral injury, etc.
      ii. Probe: what has worked and what hasn't work for you in the past?

3. **Wellness Training**
   a. What do you think about the [INSERT NAME OF TRAINING] provided by [INSERT NAME OF ORGANIZATION]?
      i. Probe: What are your views about the wellness training you received?
      ii. Probe: What else you wished you learned during training? What was not covered that you wish was covered more?
      iii. Probe: How did the program support you?
      iv. Probe: What else do you wish your organization could do for you?

4. **Promoting a Cultural Health & Resilience**
   a. What does wellness mean to you?
   b. How do you think a cultural of health and wellness could be instilled systemically and organizationally?
      i. Probe: what does a healthy organization look like?
      ii. Probe: how can healthcare move towards implementing a work culture that prioritizes staff wellness?

5. **Recommendations**
   a. What recommendations do you have for organizations as well as policymakers?
      i. Probe: what kinds of support systems are most helpful and would benefit in preventing burnout and attrition?
   b. What recommendations do you have for other health care professionals?

6. **Process**
   a. Is there anything that we didn't talk about today that you would like to add?
   b. How did it feel to talk about this today?

Thank you for your participation. Is there anyone else who you think would be interested in being interviewed for this project?

Appendix G. Semi-Structured Interview Protocol (Key-Informants)

Thank you for participating in this interview. Your participation is an essential part of this project. We're interested in learning more about the process of implementing the peer-support thriving and wellness programming.

Do you have any questions before we begin?

A. Demographics: Tell me about yourself – what is your age, gender, race, ethnicity, occupation, and how long you have been working in healthcare?

B. Wellness Training
   a. **What do you think about the [INSERT NAME OF TRAINING] provided by [INSERT NAME OF ORGANIZATION]?**
      i. Probe: What are your views about the wellness training provided?

C. Promoting a Cultural Health & Resilience
   a. How do you think a cultural of health and wellness could be instilled systemically and organizationally?
   b. Probe: what does a healthy organization look like?
   c. Probe: how can healthcare move towards implementing a work culture that prioritizes staff wellness?

D. Recommendations
   a. What recommendations do you have for organizations as well as policymakers?
      i. Probe: what kinds of support systems are most helpful and would benefit in preventing burnout and attrition?

E. Process
   a. Is there anything that we didn't talk about today that you would like to add?
   b. How did it feel to talk about this today?

Table 1

Participant Information

Pseudo Initials	Description	Participation in Study
NO	Key-informant	*Phase 1: Interview, co-design research protocol and TOTS programming*
UV	Key-informant	*Phase 1: Interview, co-design research protocol and TOTS programming*
DF	Key-informant	*Phase 1: Interview, co-design research protocol and TOTS programming*
XG	Resident Physician	*Phase 2: TOTS Programming*
AB	Resident Physician	*Phase 2: TOTS Programming and follow up and interview*
GO	Resident Physician	*Phase 2: TOTS Programming and follow up and interview*
ZP	Resident Physician	*Phase 2: TOTS Programming and follow up and interview*

Table 2

Participant Recommendations on Improving the Culture of Wellness and Resilience in Healthcare Systems

Nodes	Description	Sample Quote
Revamping the culture of medicine	Having realistic expectations for health care providers	*"... Most physicians go through so much, right? ... You all have to go through residency to become an attending, and then do your own thing. But everyone's always classically looked at that, as like a really hard time, and you're grinding, and you're like killing yourself kind of thing and just like working night time, and just many hours. And I think that in itself, or even after residency, people are stressed and stuff, so I guess it doesn't just apply there. But I think feeling like, having less high expectations, I guess on people in the medical field. It's hard to say, because obviously, you know, there are high expectations, the high stake kind of thing. But allowing for more time for somebody to kind of unwind, I guess. And because there's not really a lot of that, just in general."* – GO *"I feel like surgeons have this reputation of being like they don't have outward emotions, and being robotic. So just the culture of residency might put them in silo and to maybe talk with somebody and say like 'Hey, I'm having a really hard day,' versus like, there might be that sentiment like, 'Hey, you have to suck it up like, I did this when I was a resident, so you should be able to do it.'"* – ZP *"The amount of hours that we work, if you think about it, it's like 80 hours averaged over 4 weeks, like, is that really necessary? That's still a lot. And just to think that, like other physicians, had to do that before, and perhaps even more, that's crazy hours. So I just don't even understand how it's been teetered down... The requirements are still a lot, and it could be improved in the future. So I think I'm sure that it will be improved just because Gen Z and millennials always like push back a little bit, and are like 'Well, I'm pretty sure we should be compensated for the work that we do,' and so the community and the*

		[healthcare systems] that we work for can show us that they respect our time, and what we do." – ZP
	Recognition of healthcare providers	*"There is a lot of this lately, with the frontline workers and stuff with COVID, like the gratitude around doctors, and there always has kind of been. But I think sometimes you work really hard and you don't feel equally appreciated, especially by the institution. So maybe more things to kind of make you feel like you're noticed. I think that those little things, really make a big difference."* – GO
	Increase pay for resident physicians to match their work	*"I think we don't get paid enough and I think people say this all the time, but like, we barely get paid like minimum wage if you think about it, depending on where we live. So you know, it's also a strain to live budget to budget, like I have bills, and sometimes you're like stressed about that, because along with the demand of working very hard weeks, we have just this set salary that barely makes the cut, so that's one thing. And I think if there was some way to increase the budget or the stipend, or whatever it is, that would help, and I know everyone [other resident physicians] says that as well."* – GO
		"... it almost seems like residents aren't really given a lot of worth in the community... I feel like being actually paid for the jobs that we do [is critical] I think a lot of residents get really stressed by financial things in their lives, such as housing, or like our payments, which kind of build on top of the stressors we have in our job... I think as far as policy-wide, if it was coming from, like you know, Congress or the Senate enforcing laws, it's important to protect residents in that way [as in financially]." –ZP
Balancing supply and demand	More physicians are needed as demands	*"This is like a big thing everywhere, but we need doctors, more doctors, because there's more demand than we have available, so that just puts a lot of*

		for patient care increase	*strain on the people [physicians] that are doing it, right? So in some way they're already starting to do this, but there's a lot more like, medical schools that are starting, and I think there needs to be more residency programs or something to alleviate the strain a bit. So that also means that they use more money for that stuff... Like, if you have more [physicians] there, then you can have more residents, or just more employees, and you can have more times off. Like, you don't feel as much like pressure, a lot of times we're on backup, and we get called in, and that's supposed to be our break week, an elected week where we're not really working, but people inevitably get sick, or they get COVID or this and that, so that [time] kind of gets taken away from you. So just having more flexibility, I guess, and opportunities where you know you're not gonna get called in. Like this is your vacation time, you know, or your time to just study and learn and be on your elective. Do whatever you want to do during that time. I think that would help."* – GO
	Opportunities for connecting with peers	Creating opportunities to connect with peers to bring a sense of togetherness	*"Just having opportunities for everybody to get together, so that at work, it's not just like talking about work stuff, but also making it as if you have this place and time to interact with your colleagues. So this is just part of life, and everyone feels that connection to, you know, 'We're all doing the same thing on this together.' Having that time to connect basically."* – GO
			"If I could summarize how to prevent burnout in one word, it would be [forming] groups. I feel like that's the strategy for preventing burnout and creating a sense of solidarity, and shared experience" – MT
	Peer support model and mentorship	Peer support mentors can provide workplace community support	*"... It's important having peer support programs where you have the opportunity to identify that burnout is an issue and here's what you can do about it,... I think there just has to be a better way, you have to have senior people identifying it as an okay thing to stop and ponder about... I always turn to how okay it is for me to behave a certain way or react in a certain way in this field just based on who my seniors are and who my attendees are. So, if I see them*

talking openly about their struggles, then I'll feel better about identifying my own." – AB

"My vision is that when something unbelievably horrifying happens to somebody, everybody who has had that experience comes and says, 'I know, I know, I've been there, I've been there,' like that kind of rushing to people's side and saying 'it feels like this is the first time this has ever happened, but it has happened before and I have been there' Like this is the peer model of people who are deployed to the American Red Cross, [they] were people who lost everything, [for example] in a fire, they're the ones who are being deployed, and you go and say 'I've been there.' So that model [should be] for healthcare workers, that model should be for people who are exposed to constant suffering, like if a provider says 'Hey I am suddenly really hating a full third of my patients,' then, I need other providers to say 'Yeah, I've been there.' ... Like they're saying 'Yeah, this is what happens now, like your life is totally falling apart, correct, and somebody has experience with this, and they are here to tell you that they have survived it.'" – NO

"Like, often we're just like, we don't know what's coming and what we're getting into. But if there's somebody there, like a mentor to tell you, 'Yeah, like, there's gonna be a time period, where it's kind of harder.' And having that person to talk to, I think is good. Maybe like, just knowing exactly what you're getting into so you're not really blindsided by it." – GO

"An open-door policy with people who are senior to you, so that you're constantly reminded that it is okay to feel what you're feeling, because there are others who are feeling that way, or who have felt this way. So maybe just creating a network of people to reach out to is important. It doesn't necessarily just have to be the allocated people who are there for peer support. It could be

		just a matter of connecting you with someone that you think might have a similar story and be better [suited] to talk to." – ZP
Training and preparedness	Having training and awareness around burnout syndrome during orientation	*"I think having training, even if it's a baseline training for everybody [as in resident physicians] to just make more awareness around it [workplace burnout], and I think also just the idea that if we have new residents coming in, it's setting that culture from the get-go, where they know 'Okay, there is already training, so obviously, it's important [for the healthcare system] that we get this training.' So I think that in itself makes them [incoming resident physicians] feel more supported. For example, if somebody has a history of mental health and has anxiety and depression, they're like, 'Oh, wow! I feel very supported, like someone sees me.'"* – AB
	Mandatory PFA training	*"I think PFA is something that should be implemented in all residency orientations from the get-go. If it's not something that's already in a medical school setting, it should definitely be in residency, in orientation. I think this is something that every resident in the country needs to understand, [recognizing] the signs and symptoms of burnout, and someone who's not succeeding, or what they call drowning. We've been hearing way too much about resident suicides, and it's just something that is beyond sad, you know… PFA can be used in so many different settings, and we're faced with it every day; [for example], we're talking to families, we're talking to patients who are going through difficult times, and I think PFA can be adapted to so many different situations… And I think just making policies around initiating the dialogue. Whether or not somebody is receptive to the dialogue or not is another story, but sometimes having the conversation in the first place is important…*"– AB *"I think that kind of training for all residents would be amazing if we could set the standard that it's not just the people [resident physicians] in our group. Rather, it's gonna be every resident that comes through [the healthcare system]*

		that learns those skills… Those types of skills [learned in PFA], I think would be super important and helpful." – ZP
Mandatory feedback sessions	Monthly feedback session could provide an opportunity for mental health check-ins	*"Our schedules are such that sometimes people [resident physicians] don't even have the time to stop and think about how they're feeling, so maybe having that [feedback sessions] built-in [the residency program] could be something that would help quite a bit. Having feedback sessions that start out as objective, but then can turn into conversations that open up the ground for, 'Okay, you know, what else do you want to talk about?' or 'How are you doing?' Because I think sometimes when conversations are prefaced with 'We're just gonna talk about your feelings,' people may not see it as a way to open up as quickly. But, I think if it's a positive environment, people may decide to speak up. So, I think the check-ins are very important because they are a way [for residents] to slow down… I think the mandated feedback sessions is something that should be built into every residency program, and I think it already is to some extent. But you know, maybe having training with attendings about what that feedback session should look like. I think that's really important. I think it should be maybe like a monthly feedback session with residents about what they're doing well and what they could improve, and then turning that into you know, a mental health type conversation, and anything really, it should just be an opportunity to unload whatever you need to. I think that could be like a tangible policy that's added."* – AB
		"It is sitting down and saying, 'Hey, you know, I think the way you handled that case, or the way you spoke to that patient, it was great. I really have been watching you over the last couple of weeks we've been working together, and I think X, Y, and Z has really worked for you. But obviously, there are always areas to improve, and I think you're doing a great job with just continuing to improve. But you know, along those lines it's really important that you check-in with yourself as well.' And kind of just segueing into this more sensitive topic [of mental health], a little bit more sensitively. It shows that the attendees or your

		seniors are watching you in other ways, too. You know, they're not just sitting you down for the sake of needing to check off the mental health box, and having a conversation with a junior. It's more like, 'Well, we're talking about feedback, and I really wanna have a meaningful conversation.' So in my eyes, I think that's a more appropriate way to do it, than to, you know, have a calendar invite for 'We're gonna talk about mental health today.'" – ZP
		"*I think there could be more opportunities… more little sessions where there's an opportunity for residents to just go talk to like the program director, kind of informally about anything that's going on, or that's like the opportunity to bring up things, you know. Like twice a year, with the program director."* – GO
Support system	A support system can buffer workplace related stress	*"Having one person that you can trust to talk to or a supportive person, support system, or just an activity. These are all kind of like wellness, things that I can think of. And I think just having that balance allows you to do what you want to do; be in this career and like, sustain long-term, because it is a good career… there's obviously this negative side of it that you have to learn how to balance out with the positive things in life. So having like a positive attitude, reading, trying to do things outside of medicine, to kind of expand your mind about just life and things you can enjoy outside of this."* – GO
		"Find out who that person is that you're going to turn to because everyone is going to go through some form of burnout. I think it's unavoidable. So, it's important to figure out how to weather the storm before the storm arrives." – AB
Holding anniversaries	Holding anniversaries and honoring collective trauma	*"If we have an organization that is committed to acknowledging and repairing collective trauma, then that means we get to have anniversaries... it's just such a good harm-reduction strategy to be like 'This is a shared experience, everybody*

	as a harm-reductio strategy	*feels this way, we are all feeling this way,' and there's no us and them [leadership], or the idea that only the weak are feeling this way."* – NO
Cultivating opportunities for self-care Practices	Identifying what wellness means to the individual	*"There's a mental, physical, and emotional component to wellness… In terms of health promotion, I think it starts with identifying these [three] components and asking yourself 'What is it that gives you that inner peace and would make you feel like you can actually detach yourself from work,' and then to find time for it. It's okay to start out small, you don't need to be carving out like an hour at a time every day, you know. Maybe start with 5 minutes, then 10 minutes, then 30 minutes, whatever time you can give yourself, it's quality over quantity at that point."* – AB
Cultivating opportunities for rest and recovery	"Rest" as the sole solution in recovering from burnout	*"I think commodifying burnout solutions is the crux of the difficulty of burnout solutions, when we're trying to institutionalize burnout solutions, but it's just rest. It's not additive, there's not a thing that you can put on top of a workload that prevents burnout, it's not additive. It's recognition of our necessary cycles and the existence of our cycles, and if capitalism recognized those cycles then we wouldn't have capitalism, so I feel a little hopeless."*– NO
Facilitating conversations about mental health	Outsourcing mental health support and external marking of wellness programs can foster buy-in	*"The kind of external marketing of 'Hey see, this is what they're [healthcare providers in other organizations] dealing with, you're probably dealing with it too,' in whatever form that might bring people and groups together. It's a lot more natural if it comes from outside of the organization, if an outside organization goes, 'Hey, do you have these issues?' just bringing it all together and finding ways to connect… It's the idea of finding where those overlapping points are and bringing us [together] as a community because that's one of the things that we are dealing with when it comes to compassion fatigue, and the things that you feel, but can't quantify…"* – UV

		"Either having a mental health professional or just like somebody that is not directly involved in the general medical education program, kind of a little bit separate, like somebody who's already retired, but is just helping out or was a physician in the past, and can relate a little bit, or is volunteering would be suited."– ZP
		"*Having a mental health person available that you would feel comfortable around, like an anonymous person, not like your program director, because I feel like you could be more free talking to somebody else who's qualified and doesn't have a stake in your career, and things like that would be helpful*. – GO
		"I think, seeing others speak up about their challenges is a huge force in recognizing, 'Hey, like, if this person's asking for help, I probably have those same issues, and I'm not identifying them yet.'...If we were to have a model, we know that the model is like 'see one, do one, teach one,' and so we just need to overcome the idea that there are a category of people who can tolerate suffering, and a category of people who can't tolerate suffering. It's important to ensure that caregivers [health care providers] are getting the same kind of solidarity and recognition." – AB
Debriefing practices	Debriefing about both positive and negative events occurring at the healthcare system	*"[When we think about] debriefing, we think in terms of the negative events to debrief about, but we could have a good situation [to debrief]. In all reality, the debriefing scenario is so helpful to occur, like 'Hey, we had a great outcome, high-fives, what went well, how do we encourage and keep doing well for this incident, how do we maintain and perpetuate that? How can we do better?' And not looking at it as a negative, just 'How can we do better?'* – NO
		"You can't make the non-employee doctor do debriefing and rounding with the nurses after the crumby event. You can't mandate, but you can hope that they're

		going to do it, you can talk to them about the importance of it, but you can't mandate them. You can however mandate your charge nurse to group huddle; bringing [health care providers] together to talk, that's a beautiful thing to be able to do, that closes the loop with a person in a stressful incident or whatever instance… Bringing it all together and listening to people… It's closing the [stress-response] loop" – UV
Access to resources	Access to resources (e.g., onsite gym, fitness center, recreational lounges, shuttle service, childcare, etc.)	*"I think having a physical gym at the [healthcare system] would be so huge, like lack of access to a gym or a fitness center at the organization is a major barrier to health promotion… I go to a gym really close to [work], but even physically going home and having to like, change and go to the gym sometimes feels like a barrier. So, if I just had it here [at the healthcare system], I could just bring my stuff, and go to the gym right after work or during my lunch period, or even if I wanted to come in early and get it done in the morning. I know other big institutions that do that, and I think that would be a good improvement."* - ZP
		"[Healthcare systems] should be like, 'Oh hey, we have an onsite gym for our staff, hey we have a shuttle service that goes to the train station, so people with further commutes can get to work easier, or hey we have childcare onsite so that you can see your child during your break.'" – UV
		"Having physical ways to connect with others, whether it's having that recreation room with lots of residents or having a gym, right? So physical wellness is really important, I think, and participating in wellness together could be a way of actually helping you get past some of those mental health issues." – AB
		"Providing a fitness center/gym membership as a way to encourage staff to engage in wellness, if it's not feasible for healthcare systems to establish a fitness center within the organization." – ZP

Preventing, addressing and mitigating pandemic related stress	Adopting from the choir model in order to prevent, address and mitigate pandemic related stress	*"The choir model is everybody in this 500-person choir that is going to need to breath at some point in this note, so let's all do it at a different time, so the song is continuous. I think that the pandemic needed a choir model. And we didn't have one because we didn't have a sense of the scope and so people [leadership] sold us to big chunks, but what we actually needed was that every single time somebody needed to stop and take a breath, leaders should have given it to them that day and encouraged them to do it, to take [Leave]. If a providers come to you [as someone in a leadership position] and says, 'I can't today,' say, 'Great job, like you're off for the next two days, go home because we're going to need you long-term.' But, organizationally we don't have staffing for that, we don't have the workforce for that, and we don't have the culture for that. Like, we don't have a culture of rest, we don't have a culture of anything, but productivity. We needed to have a lot of normalizing of the phenomenon of working in two-week intervals during the pandemic, and then reset and collapse, you know, that had to be part of it, if you were going to work for two years [during the pandemic], then you go through those cycles of like 'I can do this, it's meaningful work' and the cycle of 'I cannot keep up this level of adrenaline and fear.' So, if we imagine our community of caregivers of like mental health providers and medical providers as a choir, then we need a group [such as a choir] so that we have a sense of ourselves as both continuous and falling out. Like, 'I'm falling out and the note will be carried [by another choir member], but I'm out [needing to take Leave] and you're [anther choir member] going to keep going [as in continuing working], and I'll be there in a minute [after taking time off], and then, when you fall out [as in needing rest], I'll be like that was me last week.'"* – NO