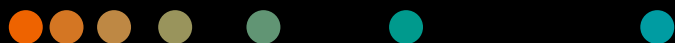


Case study

Resilience Training

siemens-healthineers.com/achieving-operational-excellence



Foreword by Siemens Healthineers

Siemens Healthineers strives to understand the broader changes taking place in the healthcare sector, which approaches may improve working practices, and to share these insights with our community.

Healthcare professional's resilience, mental health and wellbeing is a priority. The situation created by the COVID-19 pandemic has made it even more relevant and necessary. Learning about resilience and applying these learnings to everyday challenges can be instrumental in many aspects of the healthcare workplace and range of functions: dealing with stress and challenges, self-awareness, and conscientiousness for one's mental wellbeing on the job and beyond. After all, the human brain and mind can be trained, can be strengthened and shaped to support a demanding task. Training these skills can sometimes appear inaccessible, even odd to some and the step from good intention to concrete action can be challenging to realize – but it is instrumental and helpful nonetheless.

This case study explores how Siemens Healthineers committed to listen to the need of healthcare organizations, act and implement a comprehensive online resilience training. The aim was to make these techniques available for healthcare workers and professionals and evaluate the impact. Partnering with The Center for Mind and Body Medicine (CMBM) was crucial in making this program a reality. We trust this case study will provide information and insights for implementing similar programs in healthcare organizations worldwide.

For more information on Siemens Healthineers Insights, please visit:
siemens-healthineers.com/insights-series

Dr. Christina Triantafyllou
VP, Head of Improving Patient Experience,
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Executive summary

Between January and May 2021, Siemens Healthineers offered an innovative online program: resilience training for healthcare professionals and Siemens Healthineers employees. The program emphasized stress and body awareness, self-care, and social support. It was intended to help and support healthcare workers and Siemens Healthineers employees build resilience and try out tools to deal with the stress and trauma brought on by the COVID-19 pandemic. The program was offered in collaboration with The Center for Mind and Body Medicine (CMBM), a recognized expert on building resilience and addressing population-wide psychological trauma. CMBM has offered Mind-Body Skill Groups, as they name their resilience training, for almost 30 years, but the resilience training mentioned in this case study was the first to be offered exclusively online and for a mix of employees and healthcare professionals together.

Participants included Siemens Healthineers employees from 28 departments and healthcare professionals from 13 healthcare providers across the globe. The selection was arbitrary, based on individuals' willingness and availability to participate with the commitment to share what they had learned with their colleagues and within their organizations.

They participated in a total of 16 hours of online sessions, all intended to introduce and explore the various aspects of mind-body techniques, specifically as they might be used to counter stress and trauma of the type brought

on by COVID-19 and the digitalization of interactions. The techniques covered included meditation, mindful breathing, biofeedback and relaxation response techniques, guided imagery, expressive writing and drawing. Mindful eating and the use of simple ceremonies and rituals to build a network of support was also incorporated into the sessions. During the trainings, participants were encouraged to share and express their feelings as well as reflect on what they had learned in previous sessions. Furthermore, they were encouraged to practice on their own time each week what they have learned during the weekly session.

At the end of the program, participants were invited to provide evaluation feedback. The results were overwhelmingly positive. "Excellent" and "good" were by far the most common ratings applied to different aspects of the program, and overall 85 percent of respondents said they would recommend a similar program to others. The evaluation feedback also included a majority stating that the program specifically strengthened listening, empathy, and human connection within the group.

Leading healthcare organizations around the world are beginning to look for ways of helping healthcare providers, professionals and the population deal with the effects of the pandemic on stress, morale and mental well-being – effects that many feel could last years. The success Siemens Healthineers had with these resilience-building groups may serve as a model and an inspiration.

Introduction

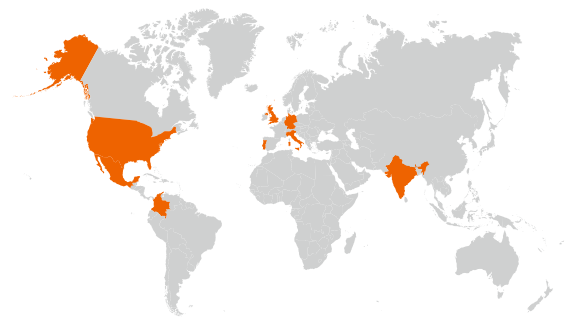
One of the discussions about the COVID-19 pandemic, that is not being held often enough, concerns a time after the pandemic has ended – when people are no longer at risk, but healthcare professionals are still paying the price for the extraordinary physical, mental and emotional ordeal endured since early 2020. There is global concern that some of them might still be paying that price for years to come.

Siemens Healthineers published an Insights Series paper in Summer 2020 entitled “Managing the impact of caregiver stress and trauma in the COVID-19 era: a strategy toward resilience-building”. Though published at a time before the issue of caregiver trauma was on the radar of very many people, the paper’s authors nevertheless had this prescient warning: “The ability of healthcare leaders to address their staff’s trauma and stress will be essential to their organization’s long-term viability and the future of patient care.”¹

It was with this priority in mind that Siemens Healthineers joined forces with the Washington DC-based The Center for Mind-Body Medicine (CMBM), which for nearly 30 years has been a leader in developing strategies and techniques to successfully address population-wide psychological trauma. Among CMBM’s innovative approaches are Mind-Body Skills Groups (MBSG), which employ experiential and integrative techniques such as breath work, movement, self-expression, meditation, guided imagery, autogenic training. All intended to help participants develop better self-care skills, lower levels of stress, improve mood, help prevent chronic health conditions, and overall build badly needed resilience.

Participants from across the globe

Participants included healthcare professionals from 13 providers across the globe, plus Siemens Healthineers employees from 28 departments.



¹ Gordon JS, Miller AJ, Nieto Alvarez I, Triantafyllou C. Managing the impact of caregiver stress and trauma in the COVID-19 era: a strategy toward resilience-building. Siemens Healthineers Insights Series [Internet]. 2020;(9). Available from: siemens-healthineers.com/insights/news/managing-the-impact-of-caregiver-stress-and-trauma.html

CMBM and Siemens Healthineers devised an innovative online approach which was the first of its kind. Previously, Mind-Body Skills Groups had been onsite sessions, for individual volunteers, for one specific organization or a population group in a specific geographic region. The new format had the ability to bring people together remotely, emphasizing small groups where the remote nature of the meeting allowed for international and inclusive exchange. In this way the format was also pioneering how to give more people access to such kind of training.

The program was designed specifically for healthcare workers and others in the healthcare field, intended to help them with stress and, in some cases, trauma brought on by the various effects and consequences of the pandemic. Participants included healthcare professionals from 13 providers across the globe: USA, Germany, UK, Portugal, Italy, Mexico, Colombia, India. Also, Siemens Healthineers employees from 28 departments enrolled: application specialists, marketing and product development managers, diagnostic imaging product developers, innovation managers, education developers, and enterprise services consultants. The selection was arbitrary, based on individuals' willingness and availability to participate, and with the commitment to share what they had learned with their colleagues and within their organizations.

This case study briefly describes the stages of the journey taken by participants in the skills groups and then examines the results of a pre- and post-program evaluation. We believe these responses provide a clear case for the success of the program, and a strong argument for other organizations to help their employees become more resilient in the face of stress and trauma.

Mind and body reaction to an experience

Anxious



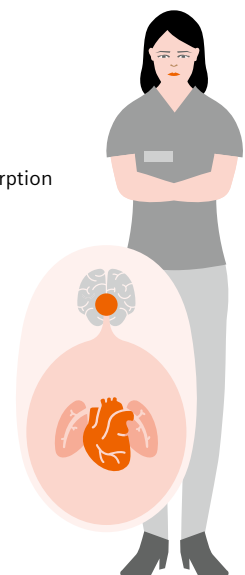
Reduces

- Mental processing capacity
- Digestion and nutrient absorption



Increases

- Emotionally sensitive and reactive
- Biomarkers in blood and saliva:
 - Catecholamines
 - Cortisol level
 - Alpha-amylase
- Heart rate
- Respiration rate
- Blood pressure



Relaxed



Increases

- Mental focus
- Biomarkers in blood or saliva: ACh
- Immune response



Reduces

- Emotional reaction
- Heart rate
- Respiration rate
- Blood pressure



Resilience Training

The program

The skills groups approach emphasizes techniques such as mindful breathing with the abdomen soft and relaxed, biofeedback, and guided imagery. The program is designed to make the most of these and tailored in such a way as to focus their benefits on reducing stress and building resilience. The participants were shown how to employ these methods in their everyday life and gave each the means to continue practicing on their own.

Participants were divided into small groups of six to seven people. The sizing of these groups was crucial, intended to support as much human interaction as the online nature of the meetings would allow, but keeping exchanges small and low-key enough so participants could feel safe. Between January and May 2021, they met for eight two-hour online sessions – an eight-stage journey through the science and potential of mind-body health.

Session 1 introduced the foundations of how the mind and body work, including the nervous system and stress response. It established an overview of breathing, self-awareness, and self-expression in the form of simple drawings.

Session 2 explored the science of biofeedback, which people can use to control bodily processes that are typically involuntary, such as muscle tension, blood pressure, or heart rate.

Session 3 explored various forms of meditation as a means of quieting the stress response, making it easier to be aware of emotions, give them space to be, and put them into perspective.

Session 4 examined the science and applicability of guided imagery and the power of creating mental images that evoke desired positive emotions and responses instead of ones driven by trauma and stress.

Session 5 explored the relevance of emotions and emotional expression, and the potential of writing as an outlet for emotions.

Session 6 explored the relation between stress and digestion, the importance of appropriate nutrition, hydration and how mindful eating can enhance the pleasure of eating and the satisfaction of making choices.

Session 7 built on the importance of mindful eating to explore the overall relevance of mindfulness in physical and mental health and well-being.

Session 8 concluded with further exploration of the power of drawing, active listening in the group, and the healing potential of certain social ceremonies or rituals.

Each session included an exchange and check-in, during which participants were encouraged to share their thoughts and feelings, followed by an educational component and then a focus on experiential learning and an exchange of perspectives. The exercises were also provided to the participants in written or audio format to further encourage practice and evaluate benefits in their everyday life.

*"It was a great course;
the meditation program was excellent."*

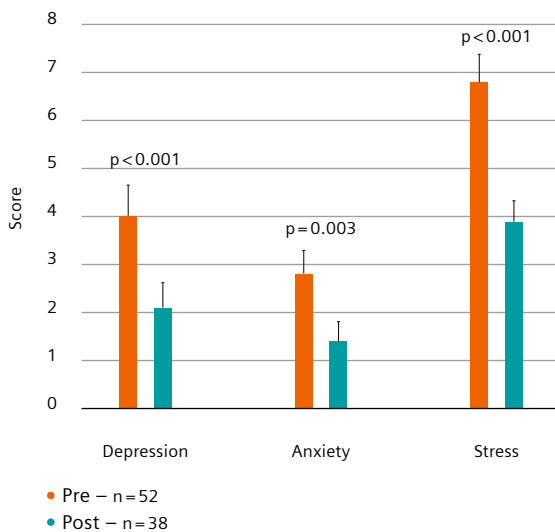
Trauma Radiographer, Healthcare Provider based in Manchester, England

The Results

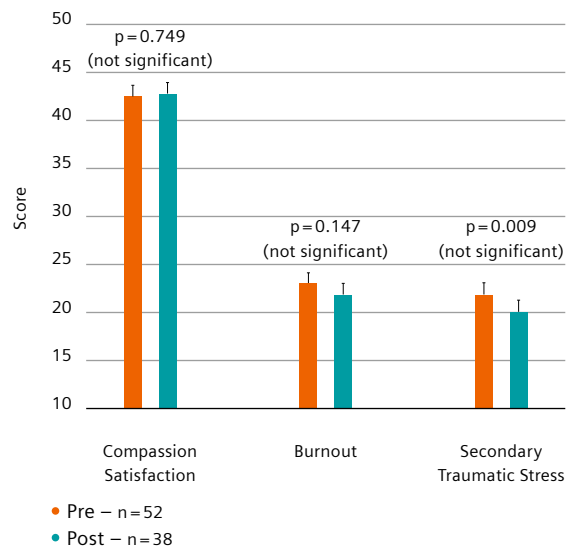
Evaluations were conducted before and after the program. Upon comparison there was a significant improvement in anxiety, depression, and stress, including secondary traumatic stress, which is the emotional duress that results when an individual hears about the first-hand trauma experiences of another. Participants were quoted as saying things like, "It really moved me emotionally, and I feel I have better ways to work with my issues now" and "The experience in this group really influenced my life in a positive way, both physically and emotionally."

Data were collected on a voluntary basis from participants of the ten groups and included 54 entries. Data was anonymized and evaluated by an independent analyst. The Depression Anxiety and Stress Scale (DASS-21) and the Professional Quality of Life Scale (ProQol) were instruments used for evaluation. On average, participants were experiencing normal levels of depression, anxiety, and stress before and after, although the scores were significantly improved following the skills groups.

Depression, Anxiety and Stress Scale (DASS-21)²



Professional Quality of Life (ProQol)²



² Data were collected from 43 women and nine men. Ages and gender were not obtained for the 2 participants who did not fill out questionnaires before the groups. Ages ranged from 24 years to 64 years with an average age of 38.8 ± 9.3 years. Of those responding at the post-measurement, 97% attended more than half (5) of the MBSG sessions, and 82% attended at least seven sessions.

The statistical models allowed all data to be included in the analysis. Data analysis was performed using SPSS version 27. The MIXED procedure was used to run linear mixed models to account for the clustering of individuals in the MBSGs. The MBSGs were a random factor in all models except the

anxiety, compassion satisfaction, and burnout outcomes where there was not enough variance at the MBSG level to give a stable estimate for the variance parameters. For these outcomes, a marginal model was run to account for the repeated measures of individuals over time. Fixed factors in all models included time. Additional models were run with the fixed factors of gender, attendance, and the interactions of gender and attendance with time to determine if results were different between men and women or whether they were dependent on the number of MBSGs attended. The Means and Standard Errors in the graphs above are the Estimated Marginal Means and Standard Errors from these models.

In addition, a vast majority of respondents rated the program as excellent or good, including with respect to its practical application to personal life and practical application to professional life. Overall, 85% said they would recommend online Mind-Body Skills Groups to others.

“This was a very well-run and instructive online group. Despite the difficulties inherent in the telemedicine format, this group was very effective in fostering a sharing, containing space while also imparting very helpful tools for mindfulness and stress management.”
Clinical psychologist, Healthcare Provider based in Manhasset, NY

“An excellent open experience to learn new mindful techniques and to meet people from around the world.”

Consultant Radiographer, Healthcare Provider based in Stoke-on-Trent, England

Conclusion

“Sometimes, we all must remember to take a break, listen to our body and our soul. Taking this course means to breathe in, breathe out and remind yourself what is important in life. Accepting that we all struggle, in one way or another. Problems won’t be solved, but it is important to learn different techniques that can be applied throughout the day that will help to deal better with aspects that concern you. Pick and choose the one that works best for you. Thank you for this beautiful mind-opening experience.”

*Global Services Marketing Manager,
Siemens Healthineers, New York, USA*

As we look back on the program and absorb the feedback from the participants, two things are clear. The healthcare providers who participated learned valuable skills and techniques for dealing with stress, and for managing stressful and traumatic situations in both the short and long term. They also learned how to better support members of their care teams, as well as their patients. In addition, our Siemens Healthineers colleagues benefited from gaining an understanding of what their partners in healthcare have gone through. This program has been an inspiration to all involved as all have learned valuable techniques for dealing with the stress and trauma during challenging times such as the COVID-19 pandemic.

All in all, this online program has proven to be a successful approach to 1) develop individuals’ resilience to cope with challenging times, 2) globally foster active listening between professionals working in health-centered organizations and 3) ultimately support healthcare professionals to continuously deliver high-value care to patients. Healthcare organizations’ sustainability depends on the resilience of individuals and teams.



Suggested follow-up on

[siemens-healthineers.com/insights/transforming-care-delivery](https://www.siemens-healthineers.com/insights/transforming-care-delivery)

- Insights Series, Issue 17: Protecting those who protect others.
Available at: [siemens-healthineers.com/insights/news/protect-healthcare-workers-covid-19](https://www.siemens-healthineers.com/insights/news/protect-healthcare-workers-covid-19)
- Insights Series, Issue 9: Managing the impact of caregiver stress and trauma in the COVID-19 era: a strategy toward resilience-building.
Available at: [siemens-healthineers.com/news/managing-the-impact-of-caregiver-stress-and-trauma.html](https://www.siemens-healthineers.com/news/managing-the-impact-of-caregiver-stress-and-trauma.html)
- Insights Series, Issue 10: Remote work for healthcare professionals.
Available at: [siemens-healthineers.com/insights/news/five-steps-towards-more-remote-care-delivery.html](https://www.siemens-healthineers.com/insights/news/five-steps-towards-more-remote-care-delivery.html)



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