

Health 4.0

Leading from the Emerging Future

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III. METHODOLOGY

❑ **Overall**, a total of 99 participants from the US Midwest and international members of an MIT MOOC, representing genders (18-78 years old), joined a mindfulness training program taught in person by an expert in mindfulness.

❑ **The program** spanned 10 sessions, delivered both in-person and online via Zoom, with a 95.9% completion rate. It consisted of four phases: i) Retrain the brain, ii) Live life to the fullest, iii) Bounce back during tough times, and iv) Transform stress into synergy, with a focus on the first phase for the purpose of this study.

❑ **Participants** provided confidential self-reflections on eight well-being indexes via online polls, assessing scores (0-10) before and after the program. 18.1% completed both pre-and post-tests.

❑ **Data Analysis:** A paired-sample t-test compared self-reported well-being indexes, using a significance level of 0.05.

❑ **Study Design:** Eight independent variables (IV) assessed significant changes before and after the training: energy (H1), stress (H2), regulate feelings (H3), gratitude (H4), positive self-talk (H5), calming brain exercises (H6), resilience (H7), and mindfulness (H8).

VI. CONCLUSION

This study supports the emerging need for Health 4.0 to provide a valid and reliable feedback loop where engaged learners of mindfulness training programs do have the capacity to take an active role in managing their healing and well-being through self-reporting.

Mindfulness is a skill that requires practice and is viewed as a journey, typically involving longer immersion and integration into daily life to experience its full benefits.

Quality assurance on the training program's self-reported outcomes includes:

Phase I: Building a general understanding of the brain, the brain-mind connection, self-awareness, and being present in the moment. Gratitude (H4), positive self-talk (H5), and regulation of feelings (H3) successfully provided support for the results of this study. That gives an indication that participants found particular value where the focus was on phase I for most of the 10 weeks.

Phase II: Providing exercises on focusing attention and awareness of body, thoughts, feelings, relations, and spirit and how this can help to live life to the fullest. This includes calming exercises such as yoga and meditation (H6: Calming Exercises).

Phase III: is focusing on Resilience. Resilience (H7) would be addressed in more detail during phase III of this program.

Phase IV: is focusing on the process of transforming stress into synergy, by understanding stress and energy better, related to H2 and H1. An encouraging result was the report of experiencing energy during this first phase of the mindfulness program.

Future research and interventions need to also focus on interpersonal and ecosystems. So far, the focus was on microsystems. What benefit can it have to move from individual to interpersonal and relational systems, and beyond to ultimately end up at societal healing?

ABSTRACT

This study explores the application of mindfulness training as a solution to address the rising rates of depression, anxiety, stress, loneliness, and burnout. It aims to introduce a quality control framework to assess the progress of mindfulness techniques in achieving Health 4.0. The objectives of the study include examining the effects of mindfulness training on energy levels, stress reduction, gratitude, regulating feelings, positive self-talk, engaging in calming brain exercises, resilience, and mindfulness.

The study involved 99 participants from the US Midwest and international members of an MIT MOOC who completed a 10-session mindfulness training program. The participants provided self-reflections on various well-being indexes before and after the program. The results indicated significant improvements in energy levels, regulating feelings, gratitude, and positive self-talk. No significant differences were observed in stress reduction, engaging in calming brain exercises, resilience, and mindfulness after only 10 training sessions.

The discussion highlights the potential of mindfulness training to empower individuals in managing their health and contribute to the evolution of healthcare systems. It emphasizes the importance of co-creating the emerging future by integrating best practices from stakeholders. The study concludes that mindfulness training promotes overall well-being and contentment by enhancing focus, emotional regulation, self-awareness, and gratitude. It also suggests that further research should explore the impact of mindfulness training on interpersonal and societal healing.

I. INTRODUCTION

- US Depression rates reach new highs (Gallup, 2023).
 - Depression and anxiety affect 38% Worldwide (Gallup, 2021).
 - 79% experienced work-related stress (APA Work & Well-being Survey, 2021).
 - About 1-in-2 adults are lonely. The rate is highest among young adults (US SG, 2023).
 - 77% experienced symptoms of burnout in their job (Deloitte, 2022).
- This has implications for physical, emotional, and behavioral health of individuals as well as health care in general.

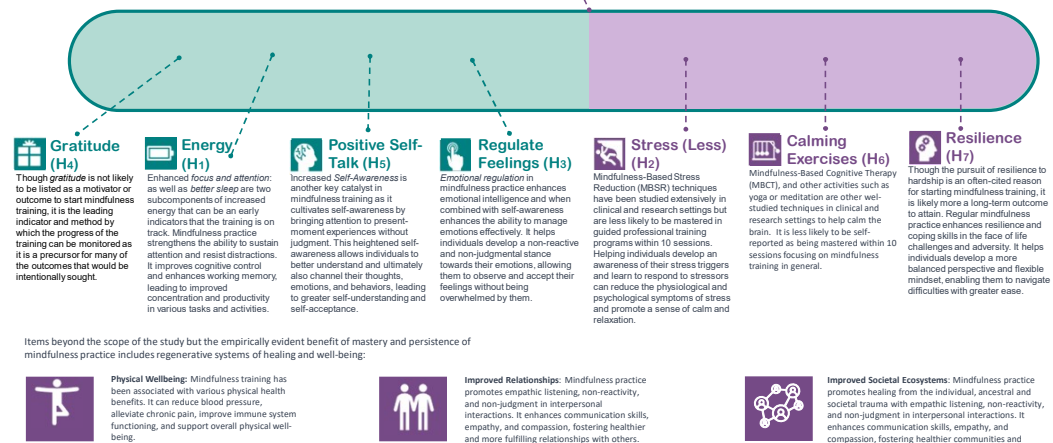
One solution grounded in clinical and research evidence is mindfulness training. During the process of mindfulness training, a person develops strategies for increasing a state of non-judgmental awareness and attention to the present moment (presencing). It involves intentionally focusing one's attention on the present experience, including thoughts, feelings, bodily sensations, and the surrounding environment, without judgment or attachment. Mindfulness training typically involves learning and practicing specific techniques and exercises that develop mindfulness skills.

Though the health benefits from mindfulness practices are well documented, this study seeks to introduce a quality control framework for assessing progress on the continuation and maturation of deploying mindfulness techniques toward leading with Health 4.0 from the emerging future.

V. DISCUSSION

Health 4.0 represents the convergence of technology, data, and healthcare to enable more efficient, effective, and patient-centered healthcare delivery. It has the potential to revolutionize healthcare systems, enhance medical decision-making, and improve patient outcomes. At the center of this study is mindfulness training empowering individuals to take an active role in managing their health.

In the process of re-imagining healthcare, there is also a need for co-creating the emerging future with the integration of best practices from participating stakeholders. In the context of quality control, this includes providing tools to help an actively engaged learner of mindfulness techniques assess if they are making progress and strive towards successive milestones in building mindfulness depth.



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II. OBJECTIVES

H1: Actively engaging in 10 sessions of professional mindfulness training would result in a **significant increase in energy levels**.

H2: Actively engaging in 10 sessions of professional mindfulness training would **significantly decrease stress levels**.

H3: Actively engaging in 10 sessions of professional mindfulness training would **significantly enhance levels of gratitude**.

H4: Actively engaging in 10 sessions of professional mindfulness training would **significantly increase understanding of the brain and how to regulate feelings**.

H5: Actively engaging in 10 sessions of professional mindfulness training would **significantly increase the habit to talk in a kind and positive manner with self** for individuals.

H6: Actively engaging in 10 sessions of professional mindfulness training would **significantly improve readiness to participate in calming brain exercises (e.g. yoga or meditation)**.

H7: Actively engaging in 10 sessions of professional mindfulness training would lead to a **significant improve levels of resilience**.

H8: Actively engaging in 10 sessions of professional mindfulness training would lead to a **significant improvement in mindfulness**.

Affiliations:

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