

Can Robots Improve the Mental Health of the Workforce?

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The Growing Need for Mental Health Support of the Workforce

Before the global Covid-19 pandemic, an estimated 26% of Americans ages 18 and older, about 1 in 4 adults, suffered from a diagnosable mental disorder in a given year,¹ and about the same percentage in Canada.² By June of 2020, amid the global Covid-19 pandemic, 40% of Americans reported experiencing significant emotional upheaval with anxiety, depression, trauma-related symptoms, increased use of substances, and even suicidal ideation (11% reported seriously considering suicide), which was a higher percentage than in 2019.³ The rate of suicide has increased 35% from 1999 to 2018, growing by about 2% per year, before the stressors of 2020 and 2021 hit.⁴

Stress and mental health issues are deeply disruptive for the individuals suffering from the illness as well as their loved ones. Employers are concerned about employees from a personal perspective but also from a cost and productivity standpoint. In fact, 53% of employers expressed concerns with the mental health of their people in July of 2020, up from 32% in March of 2020.⁵

Workplace mental health was estimated to cost \$500 billion of lost productivity annually, before the global pandemic.⁶ Furthermore, there is a strong and growing body of evidence that mental health conditions drive up medical costs and that effective mental health treatment, particularly when integrated with medical treatment, defined as integrative medicine⁷, lowers medical costs and improves outcomes.⁸

Prevalence of Behavioral Health Benefits

Employers, particularly mid-sized to large employers, provide mental health benefits to their employees that address a range of issues and disorders from work, family and

¹<https://www.hopkinsmedicine.org/health/wellness-and-prevention/mental-health-disorder-statistics>

² <https://ontario.cmha.ca/wp-content/uploads/2016/10/CMHA-Mental-health-factsheet.pdf>

³ <https://alert.psychnews.org/2020/10/americans-report-increasing-rates-of.html>

⁴ National center for health statistics

⁵ <https://www.kff.org/coronavirus-covid-19/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/>

⁶ Mind the Workplace - MHA Workplace Health Survey 2017

⁷ <https://integrativemedicine.arizona.edu/about/definition.html>

⁸ Pfeffer, J. & Williams, L. (2020) Mental health in the workplace: The coming revolution. McKinsey & Company

financial stress to anxiety, depression, substance use disorders, bi-polar disorders, schizophrenia and much more. The most prevalent issues cited by employers are depression, anxiety, substance abuse, neuroses, suicides and comorbidities with medical conditions such as sleep disturbances, weight management, lack of proper nutrition and musculoskeletal conditions.⁹ Hereafter, these issues will be summarized as “behavioral health” concerns in this article for simplicity.

In fact, about 90% percent of large employers offer Employee Assistance Programs (EAP’s)¹⁰ and behavioral health is covered under most health plans the same as other medical conditions, in part due to the mandate of the Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA)¹¹, a US federal law that generally prevents health plans that provide behavioral health benefits from imposing less favorable benefit limitations on those benefits than on medical benefits.

From EAP’s to Robots - the Range of Behavioral Health Benefits

There is a range of behavioral health benefits from EAP’s to artificial intelligence (AI) enabled robots, that can be categorized as follows:

- Employee Assistance Plans (EAP’s)
- Behavioral health benefits through networks of providers
- Tele-behavioral health
- Self-service digital programs
- Artificial intelligence (AI) digital interventions “robots”

There are variations across the categories listed above and within each category. For instance, some EAP’s are bundled with health or disability products and offered for “free”. These EAP’s are limited in scope and not actually free, but packaged with high margin products to enhance the attractiveness of those products. Other EAP’s are robust, stand-alone, programs that include components from other categories such as face-to-face counseling visits, tele-behavioral health, onsite services, and digital programs. The first EAP’s were internal, offered onsite and run by employers. Over the years, most EAP’s have become external and there are over 800 external EAP’s worldwide.¹²

⁹ Key Insights, Industry Benchmarking Calls on Mental Health, National Business Group on Health, May, 2019.

¹⁰ Attridge, Cahill, Granberry, Herlihy (2013). The NBC Industry Profile of External EAP Vendors. *Journal of Workplace Behavioral Health*, Volume 28, No. 4 Attridge, M. (2005). Chapter 2: the business case for the integration of employee assistance work-life and wellness services. *Journal of Workplace Behavioral Health*, 20(1-2), 31–55.

¹¹ https://www.cms.gov/CCIIO/Programs-and-Initiatives/Other-Insurance-Protections/mhpaea_factsheet

¹² Attridge, M. (2013). Keynote presentation, EAPA Annual World Conference, Phoenix

Traditional behavioral health benefits typically include coverage for diagnosed mental health conditions through managed-care networks of psychologists, social workers, psychiatrists, in-patient mental health care, and substance abuse and rehabilitation. These benefits are typically covered with the cost-sharing that is the same or richer than that of medical benefits

Tele-behavioral health offers live synchronous video counseling sessions with licensed therapists. Some tele-behavioral health services are offered through stand-alone platforms like TalkSpace, BetterHelp, and InkBlot where others offer both medical and behavioral health visits like Teledoc, MDLive, and AmericanWell in the US,¹³ and Akira and Maple in Canada.¹⁴ Still others are provided by healthcare systems like Cleveland Clinic in both the US and Canada. In all, there are over 260 telehealth providers.¹⁵

Digital programs are software programs through portals and smartphone apps that allow users to work at their own pace through activities such as meditation, stress-reduction or skills building or to communicate asynchronously with coaches. Examples include apps such as Happify, Calm, Headspace, MoodTools and many others.¹⁶

Artificial Intelligence (AI) is referred to as “robots” or “bots” in this article as a metaphor for systems that use computer algorithms that either support therapists in guiding direct patient care or software programs that guide users through questions with branching logic that take a user down different decision-trees based on their answers. An example of the latter is Woebot, a software program that enables instant messaging with users. The bot asks users about their mood and thoughts, “listens” to how the user is feeling, learns about the user and offers evidence-based tools from cognitive-behavioral therapy (CBT) to emulate a real conversation with a therapist tailoring interactions to the individual’s situation.¹⁷

The model illustrated in Exhibit 1 depicts this spectrum of behavioral health benefits. It also includes two additional components; 1) the use of behavioral economics to increase utilization and adherence of benefits within the model and, 2) the outcomes that can be achieved through improved well-being, when effectively designed and implemented..

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<https://www.forbes.com/sites/brucejapsen/2016/06/30/telemedicine-companies-see-mental-health-as-next-frontier/?sh=64ca5dac2226>

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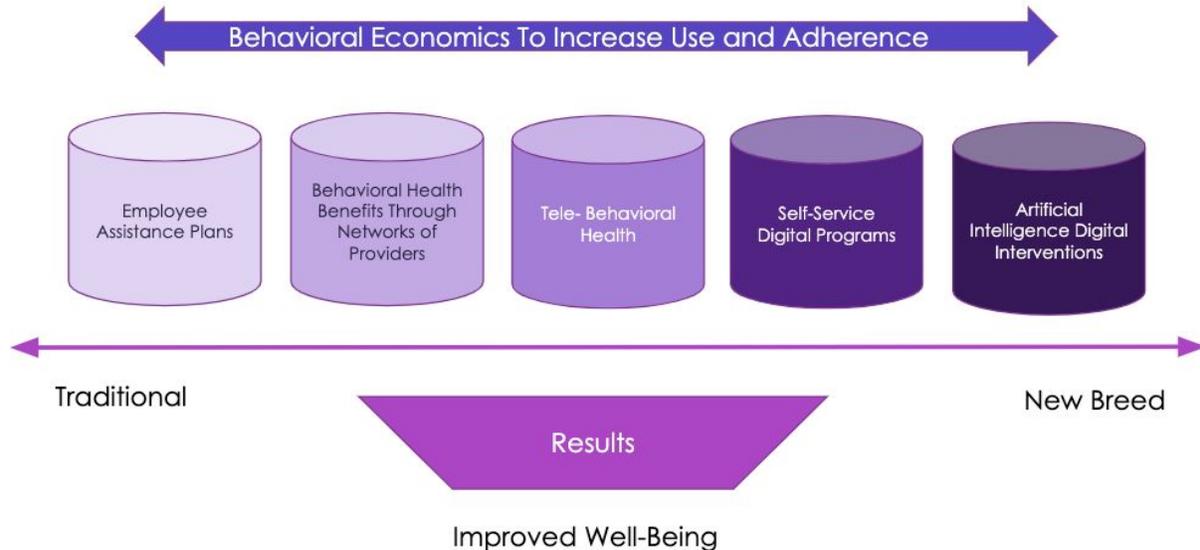
<https://www.cmaj.ca/content/190/38/E1149>

¹⁵ <https://www.beckershospitalreview.com/lists/260-telehealth-companies-to-know-2020.html>

¹⁶ <https://www.psycom.net/25-best-mental-health-apps>

¹⁷ <https://www.verywellhealth.com/using-artificial-intelligence-for-mental-health-4144239>

Exhibit 1: Range of Mental Health Benefits



Key Questions for Employers

As employers think about the spectrum of behavioral health strategies for their workforce, key questions now more than ever are:

1. What strategies are most effective at reaching the largest number of people in need of help?
2. What model produces the most favorable outcomes for the individual and the organization, a traditional model, a new breed approach or a mixed model?
3. Can behavioral economics play an important role in improving the uptake and adherence of behavioral health benefits?

Use and Effectiveness of Mental Health Solutions

Before the questions above are addressed, a review of the use and effectiveness of behavioral health benefits will help to lay the foundation. If 26% of the workforce, at a minimum, needs behavioral health services at any given time, what percentage actually receives help through the range of behavioral health benefits? While utilization of plans vary by employer, the average participation rate in EAP's is 4.5% in the US¹⁸ and 10% in

¹⁸ Attridge, Cahill, Granberry, Herlihy (2013). The NBC Industry Profile of External EAP Vendors. *Journal of Workplace Behavioral Health*, Volume 28, No. 4 Attridge, M. (2005). Chapter 2: the business case for the integration of employee assistance work-life and wellness services. *Journal of Workplace Behavioral Health*, 20(1-2), 31-55.

Canada¹⁹. The average use of mental health benefits through the health plan is estimated at 7.6%²⁰. While not mutually exclusive or precise, when added together it is assumed that 12-18% of the workforce receives basic outpatient mental health counseling (excluding psychiatry and psychotropic drugs) through the benefit plans, leaving a gap of care. For instance, one study cites that 60 percent of US counties did not have *one* psychiatrist and 55.2% of adults with mental illness received *no* treatment in the previous year.²¹

There are several reasons why the utilization rates in traditional programs have remained low. This author conducted a poll of benefit professionals who attended a Employee Benefit News Webinar entitled Beyond EAP's - Why Mental Health Benefits Are More Important Than Ever, on May 12, 2020.

The question posed to the audience drawn from 665 registered participants was: Which of the following is the biggest barrier to seeking mental health care? The choices and responses are listed below:

1. Stigma - 49%
2. Disconnected mental health and medical care 20%
3. Inability to find appropriate care 16%
4. Limited access to care 14%
5. Ineffective treatment 2%

While stigma is a major issue, attitudes are beginning to shift. The younger generation is more likely to have behavioral health issues—young adults between the ages of 18 and 25 had the highest prevalence of any mental illness—and more willing to talk openly about psychological well-being and to seek assistance.²² For others, basic awareness is needed about resources and education to help employees understand their options and when and how to engage in the right solution.

Regardless of why employees do not use behavioral health resources, or the actual gap between need and intervention, it is imperative that employers take steps to close the gap because the success is within reach. This is a problem that is within the power of employers to solve with a relatively low investment and a meaningful return.

¹⁹ Csiernik, R. P. D. R. S. W. (2003). Employee assistance program utilization. *Employee Assistance Quarterly*, 18(3), 45–60. https://doi.org/10.1300/J022v18n03_04

²⁰ Sharar.D. (2019) Where do we go from here? Improving value and pricing in EAP. *Journal of Employee Assistance*, 2nd Quarter, 2019.

²¹ Pfeffer, J. & Williams, L. (2020) Mental health in the workplace: The coming revolution. McKinsey & Company

²² Pfeffer, J. & Williams, L. (2020) Mental health in the workplace: The coming revolution. McKinsey & Company

The effectiveness of care through EAP's and workplace mental health is firmly established. A Harvard Business Review article noted that \$4 is returned to the economy for every \$1 spent on caring for people with mental health issues.²³ The reduction of symptoms and improvement in functioning relative to emotional problems at work such as depression is an example of clinical effectiveness in the context of work functioning that is often a result of counseling.²⁴ Studies found results such as employees reporting less difficulty with emotional problems interfering with their productivity, their ability to perform work carefully, and their ability to be at work.²⁵ Another study looked at five measures of work-related issues including absenteeism, the number of hours absent from work before and after EAP usage, presenteeism, an industry term to describe the degree of working without focus due to a health issue, work engagement, the extent to which employees are passionate about their job, life satisfaction and workplace distress. The study found a significant improvement in all five measures across multiple EAP's.²⁶ In fact, there are over 1,500 papers of applied research on workplace mental health and 500 on EAP's concluding that workplace intervention is generally effective.²⁷

The effectiveness of the new breed of behavioral health benefits is less understood and much more research is needed to compare the new breed to the traditional interventions. However, the purveyors of such services claim that they enjoy higher use and the same or higher rates of effectiveness. Given the prolific growth of new breed models, this is a reasonable hypothesis that deserves more research to confirm.

One of the fastest growing areas of new breed mental healthcare is tele-behavioral health. Some platforms use matching algorithms to match a patient with a caregiver based on geography, area of focus and preferences. While tele-behavioral health promises to improve access for some individuals, wait times and access problems may exist, often due to licensure rules that prohibit clinicians from delivering care to a patient in a state in which that clinician is not licensed. Some of these rules have been temporarily relaxed or suspended during the Covid-19 pandemic but may resume as barriers over time unless legislation is changed.

²³ Morra Aarons-Mele, "We need to talk more about mental health at work," *Harvard Business Review*, November 1, 2018, hbr.org.

²⁴ Azzone, V. P. D., McCann, B. M. S. C. E. A. P., Merrick, E. L. P. D. M. S. W., Hiatt, D. P. D., Hodgkin, D., P. D., & Horgan, C. S. D. (2009). Workplace stress, organizational factors and eap utilization. *Journal of Workplace Behavioral Health*, 24(3), 344–356. <https://doi.org/10.1080/15555240903188380>

²⁵ Harris, S. M., Adams, M., Hill, L., Morgan, M., & Soliz, C. (2002). Beyond customer satisfaction: a randomized eap outcome study. *Employee Assistance Quarterly*, 17(4), 53–61. https://doi.org/10.1300/J022v17n04_05

²⁶ Greenwood, K. L., Deweese, P., & Inscoc, P. S. (2006). Demonstrating the value of eap services: a focus on clinical outcomes. *Journal of Workplace Behavioral Health*, 21(1), 1–10. https://doi.org/10.1300/J490v21n01_01

²⁷ Attridge, M. (2013). Keynote presentation, EAPA Annual World Conference, Phoenix

Digital app-based programs are also growing in popularity that allow people to complete on-demand journeys, games or exercises on their own time through a website or app. The advantage of these programs is that they are immediately available, free or low cost, and often based on sound psychological principles like CBT. They may be helpful at managing low levels of stress and by providing useful tips but are limited at addressing complex or severe issues. Digital programs may also be prescribed by therapists as skill-building tasks and habit formation in between visits.

There is a growing body of research on the potential of AI-bots to reduce diagnosis errors, to process large amounts of data and to power conversations. AI-powered internet cognitive based therapy (ICBT), self-help, and AI-powered conversational agents suggests that effective treatment can be delivered without a human clinician under certain circumstances.²⁸ However, much more research is needed and these studies are suggestive but far from definitive.

Given the growing body of research suggesting that new breed mental health technologies may be effective, perhaps some of the reasons for low utilization rates can be addressed by offering employees more and alternative choices. Furthermore, the cost of EAP's is quite low, often less than \$5.00 per employee/per month and new breed solutions are relatively low cost, particularly compared to the high cost of medical and pharmacy which can be reduced by integrated medicine.

The Use of Behavioral Economics to Improve Use and Adherence

In addition, new ways of providing decision-support can lower the barriers to seeking care. Behavioral economics is an emerging innovation in mental health that leverages cognitive biases and heuristics to improve decision-making and engagement. Popularized by the book *Nudge* by Nobel Laureate Richard Thaler, behavioral economics leverages a number of biases that allow choices to be presented in a way to increase the likelihood that people will act in their own self interest.²⁹ For instance, an app that records commitments between a patient and therapist and reminds the patient weekly of those commitments, will nudge the patient to stay on track with agreed-upon steps (Commitment Bias). The same app can provide higher rewards for high value actions than lower value actions, such as more points, that can be spent in a marketplace for

²⁸ Improving mental health services: a 50-year journey from randomized experiments to artificial intelligence and precision mental health. (2020). *Administration and Policy in Mental Health and Mental Health Services Research*, 47(5), 795–843. <https://doi.org/10.1007/s10488-020-01065-8>

²⁹ Thaler, R. H., & Sunstein, C. R. (2009). *Nudge : improving decisions about health, wealth, and happiness* (Revised and expanded). Penguin Books.

healthy products (Framing Bias). Also, sweepstakes entries drive higher participation into activities than direct rewards (Prospect Theory³⁰).

One large Canadian employer used behavioral economics to improve use of their EAP through the design of their health fair. Before the pandemic, it was common for employers to offer health fairs each year where all of the vendor partners come on site, set up tables, meet employees, answer questions and give away trinkets and brochures. This employer noticed that employees avoided the EAP table, likely because of the stigma associated with mental health. The following year, the employer set up the EAP table as the registration table and each employee was required to start there, check in and pick up information before proceeding to the other tables (Default Bias). By designing the health fair this way, subsequent usage of the EAP increased and at last check, was over 30%.

A Mixed Model is the Most Effective Strategy for Employers

A mixed model that includes several components from proven comprehensive EAP's, that integrate with behavioral health networks for continuity of care, to digital programs that leverage AI and tele-behavioral health offer the greatest opportunity to drive success. This mixed model can offer a tailored approach to employees based on their needs and engagement preferences. Not all employees have access to devices and some prefer a telephonic approach or face-to-face approach. Through multiple entry points, a mixed model can help to close the gap between those who need mental health support and those who receive such support by providing more ways to connect individuals to effective resources with less stigma and lower wait times based sound scientific approaches.

The promise of new technology is the ability to offer additional ways for employees and their family members who are suffering from stress or in need of mental health care support to reach out and get help in a way that is completely private, non-threatening and even anonymous through digital programs. The need to wait a long time to get an appointment with a qualified psychologist, psychiatrist or social worker may be drastically reduced or, in some cases, eliminated addressing the issue of limited access to care. Disconnected mental health and medical care can be coordinated through newer benefit platforms that connect all resources into one system, supported by nurses and customer care representatives.

³⁰https://www.bu.edu/eci/files/2020/05/Behavioral-Economics_final.pdf

The goal of the model is to improve the well-being of employees, and their family members. Well-being, defined by Martin Seligman, includes³¹:

- Positive emotion (of which happiness and life satisfaction are all aspects)
- Engagement
- Relationships
- Meaning and purpose
- Accomplishment

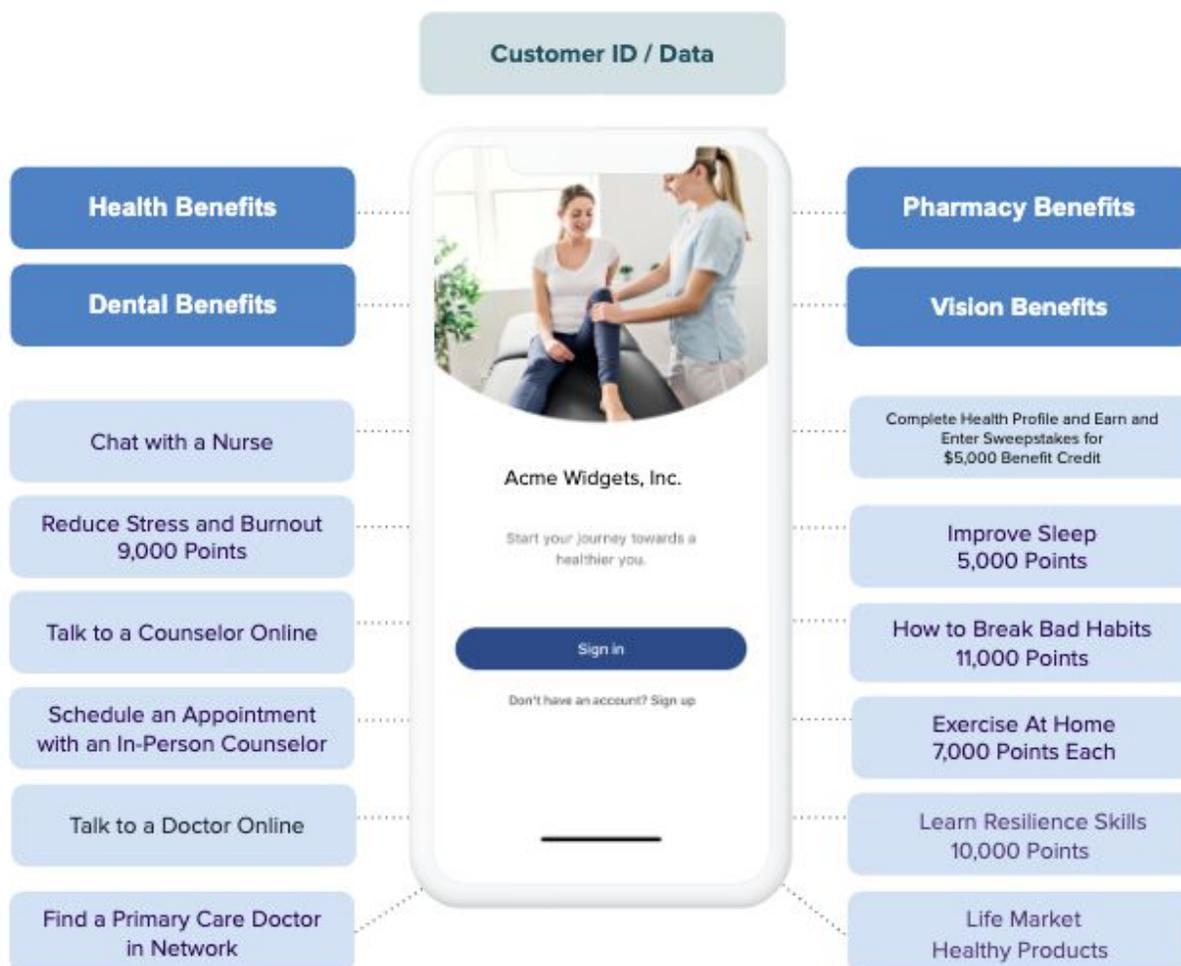
A mixed model that includes components of traditional and new breed resources, reduces stigma, and personalizes the mental health journey for individuals holds great promise at increasing well-being, which can be measured empirically.

The need for A Platform to Bring it All Together

Employers are now looking to benefit platforms that integrate all benefits into a single place supported by high-touch concierge service and nurse support. This type of next generation approach to benefits management can drive the overall health and well-being strategy of the employer. A platform approach can plug in and unplug various vendor partners over time. A platform that specializes in employee engagement and uses principles of behavioral science, including rewards and incentives, directs, engages and nudges people into the right solutions based on their data. This allows for a personalized model. Some employees want to chat, others want a counselor, others want self-serve programs. By enabling employees to get support in a personalized and non-threatening way via the option that makes the most sense for them, is optimal.

³¹ Seligman, M. E. P. (2011). *Flourish : a visionary new understanding of happiness and well-being* (1st Free Press hardcover). Free Press.

Exhibit 2: A Platform Approach to Bring All Resources Together



The results can be improved well-being and job performance. Lower direct and indirect benefit costs are likely outcomes as well. More importantly, 91% of employees surveyed believed that their employers should care about their emotional health, and 85% said that behavioral health benefits were important when evaluating a new job.³² However, the most important result is people who chose life over death and who lean in to well-being instead of pain and suffering. Beyond the clear business case to invest in mental health resources for employees, if only one person can be saved by a thoughtful employer mental health strategy - it is worth the investment.

³² Pfeffer, J. & Williams, L. (2020) Mental health in the workplace: The coming revolution. McKinsey & Company

About the Author

Eric Parmenter is Vice President of Health Advisory at League, a benefit platform company in Canada and the US. He has 30+ years of experience in employee benefits as a leader and advisor to employers and health systems. Eric is the author of the book *STOP: 21 STOPS to Reduce Stress and Enhance Joy* and graduated from the University of Illinois with a BA in Psychology and earned his MBA from the University of Chicago Booth School of Business. He is a PhD student in Business Psychology at the Chicago School of Eric holds the following professional designations; CLU, ChFC, LUTCF, RHU, REBC, CEBS Fellow, Professional Psychology and lives in Franklin TN, where he is an Adjunct Professor of Business at Lipscomb University.