Expert Insights

How technology and data can improve access to mental health resources

Easing stigma and supporting self-management

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For individuals seeking to identify or understand potential mental health symptoms or conditions, getting to the right information can be daunting.

Talking points

Our digitally interwoven world expands the scope of human interactions

As connectedness skyrockets, the multitude of people affected by mental conditions continues to grow exponentially. Yet, unprecedented digital access offers new hope and help for people seeking answers, therapies and related education.

Today, nearly every nation struggles to offer support on mental health issues

Personalized mental health management is one new frontier to address the global crisis and help reduce stigma. Data collected from multiple sources can be used to create customized treatments for patients.

Considerations for applying technology solutions

Future technology applications, and the providers and patients using them, must be adaptable to wide-ranging cultural norms and sensitivities. Understanding social, cognitive capability, and other differences of various populations is critical for offering treatment options that work.

The state of the world's mental health

The facts are indisputable and inescapable. A universal dilemma is affecting communities, organizations, military members, families, university campuses, and other societal factions worldwide. Collectively, we face a global mental health crisis, and it's taking a costly toll.

It's estimated the global cost of this crisis will reach USD 16 trillion by 2030.[1] While many costs will result directly from healthcare and other therapies, most are indirect. Indirect costs can take form as lost productivity, as well as spending on various intervention programs related to education, social services, law enforcement and the like. And not only are mental illnesses highly prevalent, they are also assumed to be largely underreported.

However, the true cost can't be simply quantified in monetary terms. According to a report by a group of global specialists in psychiatry, public health and neuroscience —as well as mental health patients and advocacy groups— the crisis could cause lasting harm worldwide.[2] The medical journal *The Lancet* "called for a human rights-based approach to ensure that people with mental health conditions are not denied fundamental human rights, including access to employment, education and other core life experiences."[3]

Heather Stuart of Queen's University explains the importance of normalizing the whole process of getting mental health treatment as one way to stand up to stigma. In her two-minute video, "Five tips to reduce mental health stigma," she says, "We don't seem to know a lot about mental illnesses as members of the general public, and we harbor a lot of misconceptions and stereotypes."[4]

Managing mental health problems, for a host of reasons that often include shame or stigma, continues to take a backseat to promoting physical wellness. Websites and apps abound for those who want to research physical symptoms like a rash, fever or joint pain. But for individuals seeking to identify or understand potential mental health symptoms or conditions, getting to the right information can be daunting, even (or perhaps especially) with internet access.

Reverberations of interconnectedness

Thanks to our digitally interwoven world, the scope of human interactions keeps expanding. And so, our awareness of the countless people affected by mental conditions continues to grow exponentially. The bright side? Today's unprecedented level of digital access offers new hope and help for people seeking answers, therapies, and related education.

Ripple effects emanating from mental health challenges are tough to measure. They can, of course, extend beyond the patient to that person's relatives, employers, coworkers, healthcare professionals, local first responders, religious groups—and even elected officials. In turn, each of them interacts with countless other people, whether socially, professionally, or by happenstance.

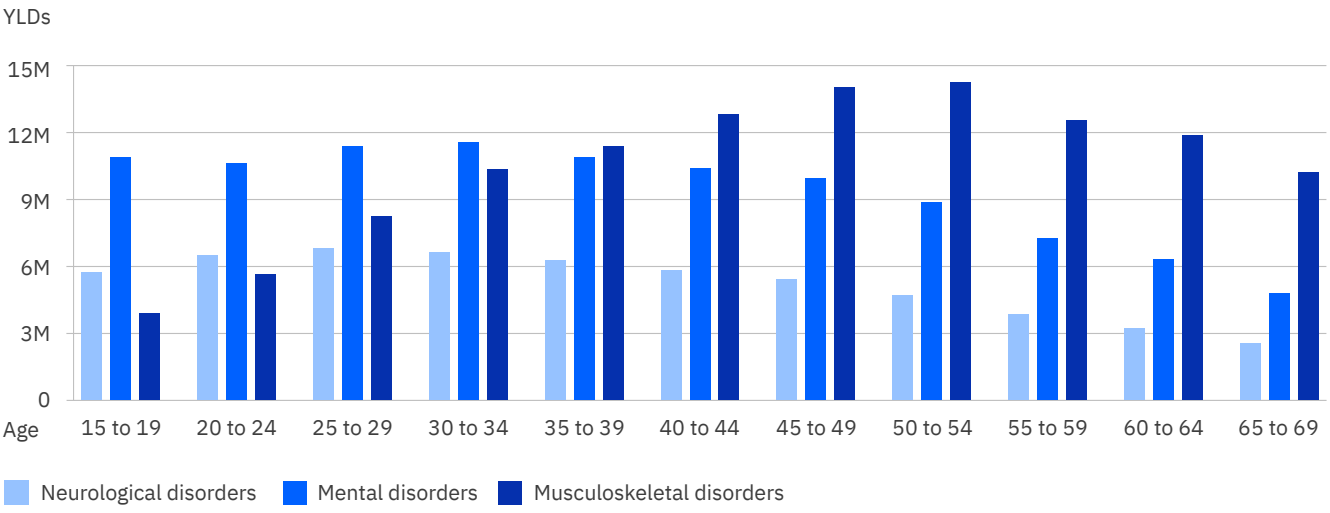
Scope of the challenge

Today, nearly every nation is struggling to improve awareness and offer support to those affected—whether directly or indirectly—by mental health issues. One billion people, more than 10 percent of the world's population, are estimated to suffer from a mental or substance use disorder.[5] What's more, the World Health Organization (WHO) estimated that in 2015, 322 million people —or 4.4 percent of the global population—were dealing with depression.[6] The proportion of the global population with anxiety disorders, which includes some people who simultaneously suffer from depression, was estimated to be 3.6 percent.[7]

As of 2017, the WHO revealed which conditions globally resulted in the most years lived with disability by both women and men (see Figure 1).[8] Mental disorders, along with musculoskeletal and neurological disorders, were consistently the top three causes of years lived with disability for those between the ages of 15 and 69 worldwide.[9]

Figure 1

Mental disorders consistently ranked among the top three causes of long-term disability around the world for both men and women between the ages 15 and 69.



Source: Data used with permission of Institute for Health Metrics and Evaluation. "Findings from the Global Burden of Disease Study 2017." Seattle, WA: IHME, 2018.

Note: Years lived with disability (YLDs) represent time lived in less-than-ideal health. Mental disorders are mainly composed of anxiety and depression; musculoskeletal disorders consist largely of back pain and neck pain.

Companies have come to realize the importance of an inclusive culture as the essential foundation for workforce well-being and mental health.

Treating pervasive mental health conditions is profoundly more difficult in circumstances where resources that are limited or hard-to-access result in marginalized populations (see Figure 2). Democratizing access to mental health care could bring benefits that echo worldwide. No longer would treatments and education be available only to those with enough disposable income or the "right" address. Instead, anyone with a smartphone could obtain critical information to help themselves, a family member, an employee, or someone else they encounter.

One of the most important and impactful issues that the application of technology and data can address is access to healthcare. A lack of access to tools for mental health concerns can have far-reaching, negative consequences on patients, their families, and the communities in which they live, work and play. For example, an app could be a life-changing option that helps an individual keep occasional depression at bay or lessen anxious feelings by finding out how to practice mindfulness, focus more on gratitude, or learn to meditate.

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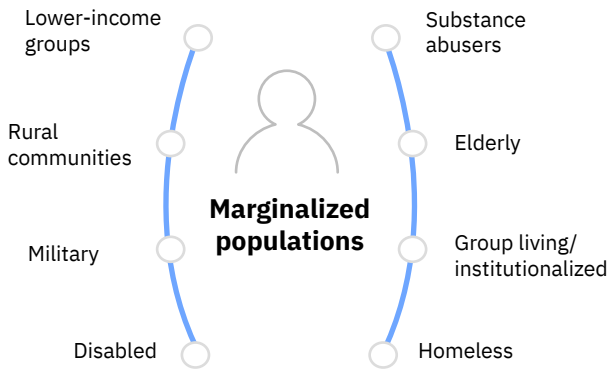
Figure 2

A sample of various groups that often face difficulty in finding mental health care information and treatment.



Organizational benefits of giving employees tools to improve health

The work environment is one of the most significant factors that can affect the mental health of our employees—and one that employers can influence. An enterprise approach to workforce well-being and mental health aims to prevent psychosocial risk factors that could have a negative impact on individuals and teams. Companies have come to realize the importance of an inclusive culture and workplace as the essential foundation.

It's not just the employees who gain. Employers, HR departments, classroom teachers and others can use technology to educate themselves about treatments, tools and self-care approaches. More than ever, people need information on how to prevent or deal with bullying, sexual harassment, violence, or other instances where in-person intervention can diffuse situations and even save lives through suicide prevention programs.

According to Dr. Lydia Campbell of IBM, it's relatively easy to offer assistance to employees who self-identify—with stress or job burnout, for example—but this small group seems to represent the tip of the iceberg. She says, "Population health and preventive medicine will be critically important in identifying the masses who have unexpressed needs. This is where technology can play a phenomenal role in enabling employers to offer the right tools by analyzing aggregated data and identifying patterns in particular business units or regions."

For now, people downloading an app don't always know what they're getting, including whose "expertise" is the source of the content.

How technology helps today

Studies have shown that online psychotherapy can be as effective as face-to-face psychotherapy in treating patients with depressive disorders. Telepsychiatry, as an emerging modality, has great potential to provide mental health services—particularly for those in rural or lower-income communities.

Wearables and applications for mobile devices are becoming commonplace. The data they capture is improving people's ability to self-monitor many aspects of mental and physical health, and moving beyond just being communication and information devices.[10] The exact number of mental health apps available today varies based on definitions of what constitutes a "mental health app." These can range from general wellness apps to disorder-specific mental health apps.

Such tools are being developed for a wide range of uses, from monitoring medication management and compliance, to physiological data collection and tracking, to behavioral self-assessment and monitoring.[11] Technology allows patients to check their own moods and conditions, then prompts them to take healthy corrective actions. This technology is already starting to be integrated into smartphones, smart watches, smart cars and smart homes.

Health apps proliferate, but how good are they?

The US National Institutes of Health estimated in 2017 that nearly 325,000 health apps were available across the most common app stores (Google Play and iOS), an increase of 25 percent in a single year.[12] They said that only about 7 percent of the market—roughly 22,750 apps—pertained specifically to mental health.[13] At that time, more than 600 of those apps focused on depression, and 200 on suicide prevention.[14]

Over time, we expect a rise in both the sophistication and the scrutiny of technological applications geared to mental health challenges. For now, people downloading an app don't always know what they're getting, including whose "expertise" is the source of the content.

But opportunities will soon emerge for experts in the field to start setting standards that help build quality into new tools. We expect mental health tools endorsed by reputable experts—such as government agencies, non-profit groups, prominent psychiatric associations and hospitals—to both instill patient confidence and improve patient outcomes.

An employer framework

From an organizational standpoint, it's vital to enhance and maintain a structured approach by continuously developing sustainable global initiatives addressing psychosocial risk, work-related stress and psychosocial well-being. It is important to highlight that a combination of different programs and different organizational levels builds a framework for success.

The World Health Organization describes psychosocial risk management as a "risk management cycle" incorporating five elements:

- A declared focus on a defined work population, workplace, set of operations or particular type of equipment
- An assessment of risks to understand the nature of the problem and their underlying causes
- The design and implementation of actions designed to remove or reduce those risks
- The evaluation of those actions
- Active and careful management of the process.[15]

Online help abounds

Various websites, apps and videos to address mental health concerns are geared to people of all ages, starting with children as young as preschool age:

Bystander Revolution features self-service content including a direct link to a telephone helpline, plus more than 300 short videos by individuals—some celebrities—recounting first-hand experiences and advice to handling difficult social situations.[16]

Calm is an app promoting meditation, mindfulness and better sleep, including sleep stories described as "soothing tales read by well-known voices."

Getting Results in Transition (GRIT) is an app developed in response to the rate of suicide among veterans, especially during the transition from active duty to civilian life. IBM designed the GRIT mobile solution to help individuals build resiliency and improve overall well-being.

Make The Connection (MTC) is a website where veterans and their family members share real stories of strength and recovery; visitors can find useful information and local mental health resources, and ways to show their support.[17]

Mental Health America (MHA), the oldest mental health organization in the US and founded in 1909, offers self-help tools online, including mental health screening tools for various conditions, as well as how to find support groups or additional resources in a community.[18]

National Suicide Prevention Lifeline offers 24/7, free and confidential support for people in distress, including suicide prevention and crisis resources for individuals, and best practices for professionals.

NSW Department of Education shares videos to deter bullying with its New South Wales, Australia audience of educators, students, parents, and caregivers.[19]

"Send up the Count" Facebook group started in 2013.[20] It is self-monitored and carefully restricted to military members for better mental health and suicide prevention through mutual, direct peer support.

STOMP Out Bullying is a nonprofit organization with the mission to educate students, parents and schools about preventing and responding to bullying and cyberbullying.[21]

Talkspace offers online therapy appointments with a choice of more than 5,000 licensed therapists and promises lower prices than traditional therapy.[22]

VAntage Point: Official Blog of the U.S. Department of Veterans Affairs covers stories about health care, education benefits, VA careers, homelessness, recovery, mental health and messages from the Secretary.[23]

Veterans Crisis Line connects people to caring, qualified responders—many veterans themselves—with the Department of Veterans Affairs year-round: at 1-800-273-8255 and press 1; text to 838255; or chat online at VeternsCrisisLine.net/Chat.

The ability to assess and intervene immediately for patients in a 24/7, real-time manner can revolutionize mental health care.

Compelling applications of emerging technologies

A notable next frontier is expected to be "personalized" mental health management—using data collected from multiple sources to create customized treatments for patients. With prior permission from patients, data can be culled from various digital sources and used to assess their behavioral and emotional states. Non-identifiable data in aggregate form can also be used to detect patterns and identify general needs across groups of people.

Wearable trackers can detect heart rate, movement, and sleep time and quality. Smartphone apps can track emotional states, record voice patterns, and detect facial expressions. Apps and data banks can also examine content in messages and social media posts, monitor device use, and track availability of services.

By analyzing these data, providers can determine which therapy modalities are better suited for a patient. Predictive technologies can help affected individuals avert relapse or deterioration of mental health status. They also help prevent the onset of serious mental health conditions in at-risk groups. The ability to assess and intervene immediately for patients in a 24/7, real-time manner can begin to revolutionize mental health care.

Yet, Aimee Johnson of the Department of Veterans Affairs reminds us that this isn't easy, even with current technologies: "I don't think anyone has yet been able to accurately predict human behavior when it comes to mental health. For example, crisis can be influenced not just by what's going on in my body, but also in my relationships, my work and so many other things outside myself."

US Department of Veterans Affairs (VA): Reaching military service members before a crisis[24]

In recent years, the number of veteran suicides has averaged about 17 per day. Recovery Engagement and Coordination for Health—Veterans Enhanced Treatment (REACH VET) is one of the VA's outreach programs to identify and intervene with those at highest risk for suicide before a suicidal crisis happens. Predictive modeling utilizing medical records identifies veterans based on demographics, use of VA services, and medications. When identified, a healthcare provider checks on the veteran's well-being, including an analysis of needs for enhanced care.

Now in use at all VA sites, the REACH VET program has identified over 60,000 veterans at risk for suicide. Patients have reacted favorably, and other positive results include more medical appointments, fewer missed appointments, fewer inpatient mental health admissions, and lower all-cause mortality.

Considerations when developing technology to support mental health

Some countries have more rigorous requirements than others, in terms of both information privacy laws, and defining how employers evaluate needs or provide tools for mental health. Global organizations must comply appropriately wherever they have a presence. And the more seamless the experience for employees, the better.

Culture and age

It will be critical to develop future applications that consider cultural norms and sensitivities, and help care providers effectively relate to cultural and social differences of different populations. App design needs to allow easy use by older clients, and those with disabilities or compromised intellectual capacity. Therefore, a combination of blended treatments should have the greatest benefit for patients, especially some older ones who may need time to adjust to technological aspects.

Inclusion

Implementation and dissemination of technology solutions need to incorporate features that offer ease of use for both patients and healthcare providers. Incorporating input from patients is important to design technologies that fit more seamlessly into their daily lives. Human factors, such as level of literacy and physical disabilities need to be addressed, again to avoid excluding vulnerable populations. Sometimes, the existing, simpler technologies that are more affordable and easily understood can lead to breakthroughs in acceptance and use of these new treatment methods.

Stigma

Technological advances in the field of mental health shouldn't be limited to the treatment aspect. Training of care providers and psycho-education for the general population and especially for at-risk individuals are important areas that need attention. Research and development in these should be at pace with the treatment technologies to allow for a holistic approach to mental health care. Emphasis should be placed on integrating education and messaging that reduces stigma associated with mental illness and encourages both patient, providers and their caregivers to engage in and sustain treatments that lead to better long-term outcomes.

Are you ready for more hope and better information about substance use and mental health?

Employers, governments and individuals can act now to improve access to existing resources, for themselves and others, by starting with these questions:

- In what ways can you start changing the culture of your organization or community so that proactive requests for tools, help for substance use and mental health treatments don't stigmatize patients? How can you establish a programmatic, personalized "push" of information about mental health resources, instead of making people rely on their own efforts to "pull" it only in times of need or even crisis?
- How can you increase social connectedness in your community and decrease detrimental help-seeking behaviors?
- How can your programs and existing online resources related to physical well-being better incorporate existing mental health solutions and tools? What is your plan to enter formal or informal partnerships that would enable you to use more advanced technologies in the near future?
- What will you do to reach your networks that may fall into the categories of marginalized populations who struggle for mental health assistance? Who should participate in identifying these groups and help set priorities for improving their access to substance use and mental health care options?

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Expert Insights represent the opinions of thought leaders on newsworthy business and related technology topics. They are based upon conversations with leading subject matter experts from around the globe. For more information, contact the IBM Institute for Business Value at iibv@us.ibm.com.

Notes and sources

1 Kelland, Kate. "Mental health crisis could cost the world $16 trillion by 2030." Reuters Health News. October 9, 2018. https://www.reuters.com/article/us-health-mental-global/mental-health-crisis-could-cost-the-world-16-trillion-by-2030-idUSKCN1MJ2QN

2 Ibid.

3 Ibid.

4 Stuart, Dr. Heather. "Five tips to help reduce mental health stigma." Queen's University. Accessed on October 7, 2019. https://www.youtube.com/watch?v=9-GCjmoMFXI

5 Ritchie, Hannah and Max Roser. "Mental Health." Our World in Data. April 2018. https://ourworldindata.org/mental-health

6 World Health Organization. "Depression and Other Common Mental Disorders: Global Health Estimates." 2017. https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf?sequence=1

7 Ibid.

8 Institute for Health Metrics and Evaluation. "Findings from the Global Burden of Disease Study 2017." Seattle, WA: IHME, 2018. Accessed on October 4, 2019. http://www.healthdata.org/sites/default/files/files/policy_report/2019/GBD_2017_Booklet.pdf

9 Ibid.

10 "Technologies for mental health." PsyberGuide: A project of one mind. https://psyberguide.org/technologies

11 Ibid.

12 Schueller, Stephen M., PhD, Marth Neary, MSc, Kristen O'Loughlin, BS, and Elizabeth C. Adkins, MA. "Discovery of and Interest in Health Apps Among Those With Mental Health Needs: Survey and Focus Group Study." Journal of Medical Internet Research. June 2018. Accessed October 7, 2019. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6018235

13 Ibid.

14 Ibid.

15 Leka, Stavroula, Professor Amanda Griffiths, and Professor Tom Cox. "Work Organization & Stress: Systematic Problem Approaches for Employers, Managers and Trade Union Representatives." Institute of Work, Health & Organizations. 2004. https://www.who.int/occupational_health/publications/pwh3rev.pdf

16 "Bystander Revolution: Take the power out of bullying." Accessed on September 29, 2019. https://www.bystanderrevolution.org

17 Make the Connection. Accessed on October 7, 2019. https://maketheconnection.net

18 Mental Health America. "About Mental Health America." Accessed on September 29, 2019. https://www.mhanational.org/about

19 "Anti-bullying video." NSW Department of Education in consultation with the Association of Independent Schools of NSW and Catholic Schools NSW. February 19, 2019. https://antibullying.nsw.gov.au/educators/resources/catalogue-green/bystander-to-upstander-video

20 Send up the Count Facebook group. https://www.facebook.com/groups/sendupthecount

21 STOMP Out Bullying: End the hate...Change the culture. https://www.stompoutbullying.org

22 Talkspace: Therapy for All. Accessed on October 2, 2019. https://www.talkspace.com

23 "VA homeless programs and training strengthen efforts to lower the Veteran suicide rate." October 10, 2018. https://www.blogs.va.gov/VAntage/53117/va-homeless-programs-training-strengthen-efforts-lower-veteran-suicide-rate; "VA partners with tech companies to prevent Veteran suicide." February 14, 2019. https://www.blogs.va.gov/VAntage/56574/va-partners-tech-companies-prevent-veteran-suicide

24 "Identifying Veterans at highest risk for suicide: Preventing Veteran Suicide." Official blog of the U.S. Department of Veterans Affairs. October 9, 2018. https://www.blogs.va.gov/VAntage/53076/identifying-veterans-highest-risk-suicide

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