Digital technology: Friend or foe to mental health?

While research suggests overuse of digital technology can lead to mental health conditions, digital solutions can also improve the care to treat those conditions.

Introduction

It's only in very recent years that digital technology has gripped health care. Electronic health records promote provider information-sharing. The web provides a plethora of hands-on information. Apps help people to lose weight; stop smoking; track exercise, sleep and eating patterns; learn meditation; or adhere to treatment plans.

However, in behavioral health, some experts suggest that technology sets up an uncomfortable dichotomy. On the one hand, research shows that overuse of digital technology, especially in the form of social media, contributes to mental health problems.

> Isolation, for example, is a top culprit of social media and other digital technology overuse as it reduces the most basic societal functioning that historically has required face-to-face interactions. People no longer need to leave their homes to meet their most basic needs; they can order groceries, clothes and other consumer items online or watch a movie on demand from their computers or smart phones. **Further, digital technology overuse can lead to depression and anxiety.** Lives curated on Facebook and Instagram inevitably prompt viewers to compare their own seemingly dull existence to these digitally-promoted lives.

Yet, technology can also invite improved access to care; reduced stigma associated with seeking mental health services; and clinical innovation that enhances treatment options. For example, telehealth and other online treatment options help improve access to care by overcoming transportation barriers and offering flexibility. They also ensure privacy as individuals never have to leave their homes to get treatment. Perhaps most important of all, digital technology provides choice; some people may prefer an online or telehealth option over face-to-face treatment, especially important for those people also with medical problems that make it difficult for them to leave their homes.

This alleged dichotomy will continue as digital technology is now a way of life, even for older generations. While youth were the original adopters of social media, older adults are fast joining the technology ranks with their younger counterparts. Indeed, older adults are the fastest growing group of online users.

What, then, are the implications of digital technology use in creating the need for mental health services while simultaneously improving access to mental health services? While the question seems to establish an unresolvable conflict, in fact the use of digital technology shows promise: technology has the flexibility and adaptability to meet differing generational needs and habits for accessing mental health treatment.

The impact of social media use: Mental health and age

Young adult   Preteen   Teen   Adult   Senior

There is conflicting evidence about the effect of social media and other digital technology use on mental health. Some research denies there's any negative connection, but other research posits that it has both negative and positive effects, which differ by generation and disorder.

What is digital technology?[1]

Digital technology converts information (words, pictures, sounds) into numbers and displays or stores the numbers. In contrast, analog technology stores the actual information on film, tape etc.

Because of its more expedient storage, digital technology enables instant communication and engagement, transforming how people work, learn and communicate. Common examples of digital technology include social media, mobile phones, multimedia, websites and more.

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Social media use and age

In general, social media use is prevalent and on the rise. Today, 72 percent of Americans use social media, compared to 5 percent in 2005.[2] Not surprisingly, younger people are the greatest consumers of social media with 90 percent of individuals 18-29 using social media compared to 40 percent for those people 65 and up.

Social media use has both negative and positive effects for youth and older adults, as shown below.

Preteens, teens and young adults

negative mental health effects

- isolation
- anxiety
- compulsive behavior
- "Facebook" depression[3]

positive mental health effects

- enhanced communication skills & social connections
- increased exchange of ideas
- development of new interests
- building on social communication and friendships[4]

Older adults

negative mental health effects

- distraction and poor memory functioning
- weakening of face-to-face communication skills[5]

positive mental health effects

- improved social connection with social groups and beyond
- increased brain activity; older brains have more neural activity with internet use than without it[5]

Additional research shows a complicated relationship between younger users of social media and their wellbeing. A Hopelab survey of 14- to 22-year-olds shows that digital technology has revolutionized how this age group searches for information and shares stories about their health.[6] That said, the association between social media use and mental wellbeing is complex, according to the survey results. For example, 65 percent say they "hardly ever" or "never" feel left out when using social media, compared to a third who say they do. However, 57 percent report they feel comparison pressure, stating they believe people are doing better than they are, while 53 percent feel they have to display their best selves when using social media.

Interestingly, older adults—the fastest growing group of online users—have similar attitudes towards accessing mental health services as they do about using social media. They may have less experience and knowledge about mental health services than their younger counterparts, but they have favorable attitudes about them, implying that older adults will be receptive to accessing appropriately designed mental health services.[7] Digital technology is fast becoming part of that redesign.
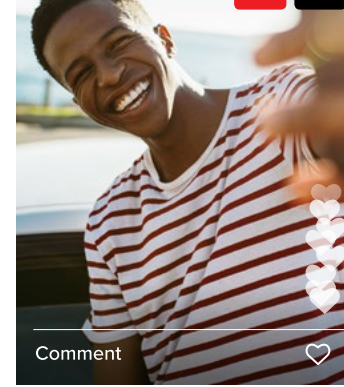
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"Facebook" depression: What's that?

Facebook depression occurs when status updates, photos etc. make users feel unpopular or in some way diminished.

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Social media use by mental health disorder

While isolation, depression and anxiety have been highlighted as harmful effects of social media use, research indicates that people with certain mental health disorders benefit from it. For example, Twitter and YouTube help people with serious mental illness, such as bipolar disorder or schizophrenia, according to a researcher from Harvard Medical School.[3] YouTube enables these individuals to feel less isolated and to advocate for themselves. Through Twitter, they can connect with individuals who have the same disorder, sharing their experiences and exchanging coping strategies. Acknowledging negative elements of social media use (cyberbullying, stigma, discrimination etc.), study participants reported the benefits outweigh the negatives.

How digital technology can treat mental illness

Digital technology is changing mental health treatment, with implications for clinical practice, services and access to those services.[8] The use of this technology can vary by disorder, type of therapy, format and delivery.

The look and feel of digital technology for mental health

Intervention types	1. Cognitive behavioral therapy (most common)	2. Acceptance and commitment therapy
	3. Behavioral activation	4. Mindfulness interventions
	5. Mindfulness interventions	6. Problem-solving therapy
	7. Disorder-specific	8. Span multiple diagnoses with a broader clinical range
Format	1. Face-to-face weekly counseling sessions via telephone or online video	2. Briefer, more frequent sessions via website or app
	3. Step-by-step how-to	4. Flexible modules that allow people to choose service components to address their unique concerns
Features	1. Self-monitoring tools	2. Learning exercises
	3. Audio and video feedback	4. Progress reports and interactive quizzes and games
	5. Most are web-based to be accessible on many devices, while others are app-based for smartphones	

The value of digital treatment and its effectiveness

First and foremost, digital solutions provide individuals with more treatment options, especially for those people who live in rural areas and have little access to providers. Digital technology also offers convenience and an alternative delivery option.

There are clinical implications as well. It provides a new way of assessing and tracking psychopathology, such as the interpretation of assessment questionnaires.[8] It also introduces new modes of assessment, making it possible to catch new mental health episodes at an early stage and provide timely treatment. Further, digital technology enables clinical training and education to be conducted on a broader scale.

There may be value in digital treatment options, but are they effective?

While there has been fairly extensive research on web-based options, there has been much less research conducted on app-based options. Highlighted findings are as follows:

1 Direct-to-user treatments are popular and aid underserved groups well. However, the study notes that completion rates of apps' interventions are low if not supported by clinicians or coaches via telephone, email or chat rooms.

2 Supported digital interventions are more effective than unsupported ones.

The consensus is that treatment adherence improves with support.

With support, digital treatments are as effective as face-to-face treatments.

Further study needs to be conducted to determine whether different disorders may respond differently to digital and face-to-face services. **3**

Do your due diligence

Digital technology's potential to address barriers to care, drive clinical innovation and mitigate stigma is great. However, not all digital technology is created equal.

Many apps, for example, make extraordinary claims with little or no evidence to back them.[9] Privacy and security are also hot-button issues that can't be ignored in the development and use of digital mental health solutions.

now

In summary, there is enough evidence to support the use of digital technology in providing mental health treatment. However, as with most aspects of health care, what works for one person may not work as well for another. The use of new technologies is no exception. Which approach to take—online, in-person or a combination of the two—is a decision to be made between the individual and the clinician. Any choice of treatment modality requires consideration of a person's personal preferences, beliefs and progress toward self-determined goals.

Digital treatment for special populations

Digital technology as part of the solution to address mental health treatment for specific populations is just beginning to realize its potential. Consider college campuses and the workplace, two settings with discreet populations.
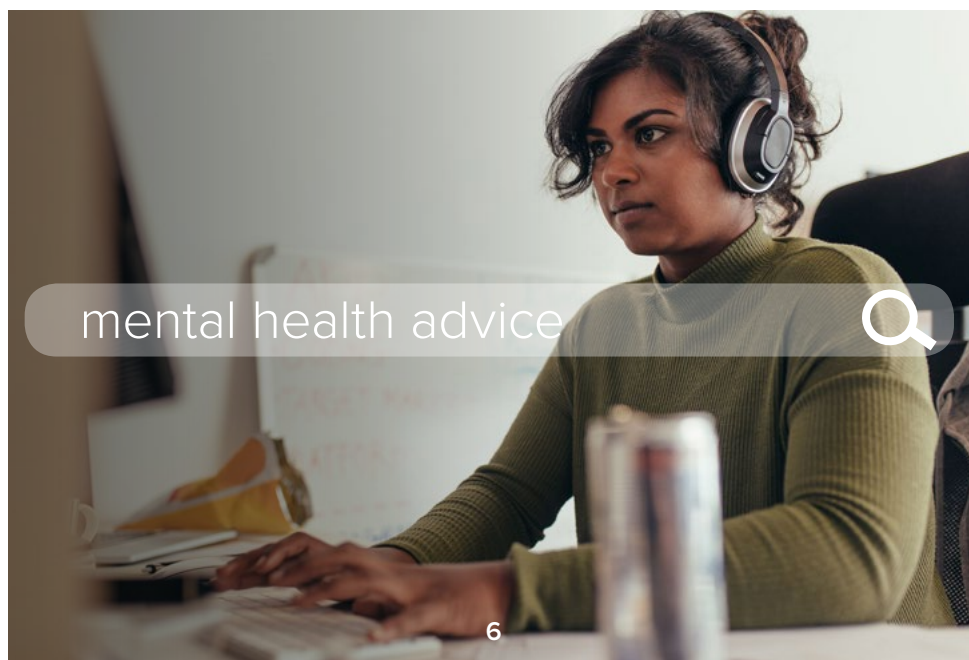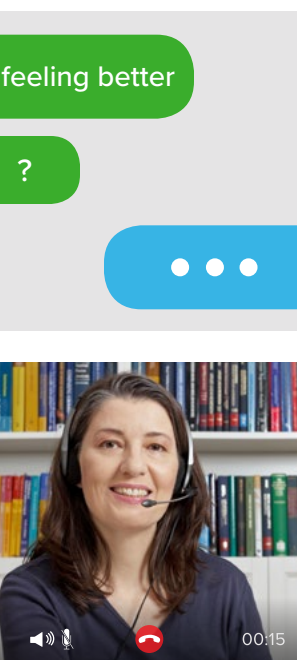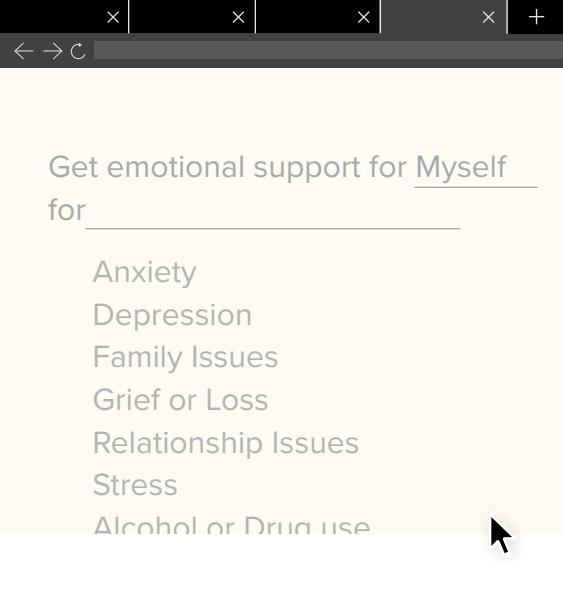
Workforce mental health

Employees and employers alike need solutions that address mental health and wellness challenges. Approximately 18 percent of US workers experience some type of mental health problem every year, with depression the leading cause of workplace absenteeism.[10] Further, 63 percent of respondents to a Mental Health America Workplace Health Survey reported that workplace stress negatively affects their mental health.[11]

> **Consumer health technology is a growing market,** with the percentage of consumers using mobile health apps tripling over four years, from 16 percent in 2014 to 48 percent in 2018.[12] Employers can tap into this growing comfort with health technology to increase their Employee Assistance Program (EAP) utilization—a potentially useful asset with historically low use.

This consumer trend extends beyond the United States. In one workforce survey in England, 72 percent of respondents said they have or would use online counseling services, and 82 percent said they have used or would use websites to search for mental health advice and information.[13] Technology-enabled CBT tools were popular among respondents, and 52 percent said they would use chatbots—a computer program that simulates a human conversation—to help them manage a health condition.

A changing workforce adds to the call for using digital technology to address mental health issues. Older adults are open to technology use and becoming more comfortable with it, but it is the younger generations who embrace it most openly. As Baby Boomers age out of the workforce, technology will become an even more viable and relevant resource for supporting mental health and wellness.

Get emotional support for Myself
for _____

    Anxiety
    Depression
    Family Issues
    Grief or Loss
    Relationship Issues
    Stress
    Alcohol or Drug use

Digital solutions

Digital technology solutions to address mental health and wellness for students and employees are: **user-friendly, flexible and available, empowering, affordable, and stigma-free.**

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Campus mental health

The demand for mental health services on college campuses is on the rise. In one survey of 123,000 students, 31.3 percent felt so depressed at some point in the last 12 months that it was difficult to function, and 51 percent felt overwhelming anxiety.[14] Campus administration is sensing the urgency; 82 percent of respondents of the American College Counseling Association's 2013 survey of college counseling centers reported increases in the number of students with severe psychological problems.

Students are not seeking counseling services relative to the need: directors at small colleges reported that the average percent of students seeking services is 9-12 percent and 6-7 percent at larger colleges and universities, according to the survey.

> Colleges and universities are rethinking how to address student mental health; they have come to view the entire campus as a safety net where students can seek support through multiple access points.[14] **Harnessing digital technology to address that need is a logical move.**

Both research and practice indicate young adults' willingness to use social-media technology to help address mental health issues. One study published in the *Journal of Medical Internet Research* reveals that young adults view social media-based interventions for mental health treatment as "highly usable, engaging and supportive".[15]

Campuses are capitalizing on that mindset. Many college counseling centers use online screening tools and mental health education, and social media is starting to be used as well.[14] Tweets and other posts can send links on how to handle stress, for example, when counselors are out of the office. Research indicates that Twitter shows the possibility of real-time monitoring of at-risk individuals, such as for suicide, which means counselors can monitor these individuals' social media. Telehealth—where student and counselor connect by online video or phone—augment existing counseling services.

For students, who live in the very defined environment of a campus, digital technology skirts the stigma associated with mental health; there is little or no coming in or out of the counseling center. Its flexibility and availability also meet the needs of a population that tends to work and play almost all hours of the day. Finally, many younger adults feel more comfortable with a technology solution versus meeting a mental health professional face-to-face.

Conclusion

On the surface, there appears to be a conflict: how can the very technology that sometimes leads to mental illness also help to treat it? As is often the case, the answer lies in its application: too much use can lead to distorted views and obsessive behaviors, but smart design and judicious presentation can offer many pathways to ensuring that people get the care they need—when, where and how they want it.

1 https://www.encyclopedia.com/history/dictionaries-thesauruses-pictures-and-press-releases/digital-technology
2 https://www.pewinternet.org/fact-sheet/social-media/
3 https://www.bbvaopenmind.com/en/technology/digital-world/the-role-of-social-networks-in-mental-health/
4 http://www.center4research.org/social-media-affects-mental-health/
5 https://www.deseretnews.com/article/865685302/How-social-media-and-technology-are-changing-the-lives-of-the-elderly.html
6 https://www.hopelab.org/reports/pdf/a-national-survey-by-hopelab-and-well-being-trust-2018.pdf
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8 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5214969/
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