The Internet of Everything in Behavioral Health & Beyond

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Human Touch Matters

https://wemattercampaign.org/about/
https://youtu.be/Q6EiXD9CDUE
You Tube, Instagram and Snapchat are the most popular online platforms among teens. Fully 95% of teens have access to a smartphone, and 45% say they are online 'almost constantly'
Lower-income teens are more likely than teens from higher-income households to use Facebook

% of U.S. teens, by annual household income, who say they use Facebook

- Less than $30K: 70%
- $30K-$74,999: 56%
- $75K or more: 36%

Source: Survey conducted March 7-April 10, 2018. “Teens, Social Media & Technology 2018”

PEW RESEARCH CENTER
<table>
<thead>
<tr>
<th>Platform</th>
<th>Say they use ...</th>
<th>Say they use ... most often</th>
</tr>
</thead>
<tbody>
<tr>
<td>YouTube</td>
<td>85%</td>
<td>32%</td>
</tr>
<tr>
<td>Instagram</td>
<td>72%</td>
<td>15%</td>
</tr>
<tr>
<td>Snapchat</td>
<td>69%</td>
<td>35%</td>
</tr>
<tr>
<td>Facebook</td>
<td>51%</td>
<td>1%</td>
</tr>
<tr>
<td>Twitter</td>
<td>32%</td>
<td>3%</td>
</tr>
<tr>
<td>Tumblr</td>
<td>9%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Reddit</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>None of the above</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note: Figures in first column add to more than 100% because multiple responses were allowed. Question about most-used site was asked only of respondents who use multiple sites; results have been recalculated to include those who use only one site. Respondents who did not give an answer are not shown.

Source: Survey conducted March 7—April 10, 2018.

"Teens, Social Media & Technology 2018"
The Open Technology Institute looks at how, in this digital age, we ensure that there is universal access, that we have an Internet that is as Sir Timothy Berners-Lee envisioned: one that is open and free, ... where inequities in other parts of society don’t play out.

Darren Walker, President, Ford
The Ranking Digital Rights 2018 Corporate Accountability Index finds the world’s most powerful internet, mobile, & telecommunications companies fail to disclose full information about how users’ data is handled.

Rebecca MacKinnon, Dir. Ranking Digital Rights
https://rankingdigitalrights.org/index2018/
Internet of Things

• The Internet of Things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect and exchange data,[1][2][3][4][5][6] creating opportunities for more direct integration of the physical world into computer-based systems, resulting in efficiency improvements, economic benefits, and reduced human exertions.[7][8][9][10]

• The number of IoT devices increased 31% year-over-year to 8.4 billion in 2017[11] and it is estimated that there will be 30 billion devices by 2020.[12]

• The global market value of IoT is projected to reach $7.1 trillion by 2020.[13]

The Internet of Everything

- The Internet of Everything (IoE) is a broad term that refers to devices and consumer products connected to the Internet and outfitted with expanded digital features. It is a philosophy in which technology's future is comprised of many different types of appliances, devices and items connected to the global Internet.
- According to NASMHPD Behavioral Health Platforms for IoE now include:
  - Social Media, Mobile, Apps, Web-Based, Computer-Based
Artificial Intelligence, Machine Learning & BIG Data

- Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals.

https://en.wikipedia.org/wiki/Artificial_intelligence
“IT’s” an **EPIC** Game Changer!
The Evolution of Internet of Everything in Behavioral Health

- Have we seen this movie before?
- enter….the **LIGHTENING SPEED** of the Evolution of IoT, IoE, mhealth and AI
- Shocking Thunder of “Experts” Flooding the Field with Applications, Tools, Big Data Vehicles, Robots & ?

**EPIC** change!

- **Embrace New Technologies** in behavioral health to **Promote Wellness and Improve Care.**
- **Involve All Stakeholders** in the process and **Continuously Safeguard Privacy & Security!**
  - **Form New Partnerships, Bring Your Expertise to the Table & Make NEW Meaning of all!**
Behavioral Health Tools Today

FYI: There are more than 10,000 of them!

ssw.umaryland.edu/traininginstitutes
Hmmmn...Let’s See...

- To App or not to App?
- To Screentime or not to Screen time?
- To Scream time or not to scream time?
- These are just some of the questions....
Everything You Learned in Kindergarten...right?
...okay, not exactly but almost 😊

- End User Adoption Concerns is a Generational Issue
- Internet Safety Starts early in many but not ALL communities in the Unites States today. For example:
  - Brain Pop Jr. Free Internet Safety Movie & Quiz
  - Whitehouse Guide: Talking with Kids about Being Online
  - Common Sense Media
So the Flip Side is.... 😞 😞 😞

- “Screenagers”, the movie and the reality
- Correlation between Depression and Social Media Use in Teens
- Cyberbullying leading to Suicide and more
- Fun Fact: Silicon Valley Execs Raise Their Kids TECH FREE!
- The current version of DSM-5 noted that Internet gaming disorder is a condition that requires more research in order to be considered as a full disorder.
- Serious Risk Data Breach, Profile Identification, Identity Theft & Damage!
  - Insufficiently secured apps
  - Market and money motivated data mining
NIMH on The Future of Technology & Mental Health Treatment

**UPSIDES**

- Convenience
- Anonymity
- An introduction to care
- Lower cost
- Service to more people
- Interest
- 24-hour service
- Consistency
- Support

**TBD**

- Effectiveness
- For whom and for what
- Guidance
- Privacy
- Regulation
- Overselling
IoE, YOU & Your Community

How many apps or tech tools do you use to support your life and work? How are they helpful and not? Do you understand the privacy policy of the apps you use? How do you decide which apps to use?

How is your Community using IoE now? What are your future plans looking like for IoE?
Toys, Tools, Gizmos, Virtual Reality and more...

What are these tools and what can they do?

A Few Examples:
- 2018 Reports of Commercial “Best”
- Crisis Test Line, Woebot, TESS, Calm
- SAMSHA: relief link, ASK, Hope Box
- SOC Wrap Approach: ProxiCare, My Strength

DISCLAIMER: These examples are not an endorsement. The presenters cannot attest to the quality of these products.
Some Relevant Industry Review Resources & Standards

- February 2018 Update: CFR on Confidentiality of Behavioral Health Records
- Children’s Online Privacy Protection Act
- HIPAA, Children, Youth & Behavioral Health
- Special Education Apps & Assistive Technologies – The Tech Edvocate
- Recent Changes to NASW Code on Technology
- Common Sense Media – categories for children’s mental health, education
- PsyberGuide – app evaluation tool
- New America – corporate accountability tool
Anxiety & Depression Association of America Guidelines

- Ease of use
- Effectiveness
- Personalization
- Interactive Feedback
- Research Evidence

https://adaa.org/finding-help/mobile-apps
The Blended Initiative
NIDA & the National Frontier & Rural Health Education Center

- This National Institute on Drug Abuse and the Substance Abuse supported initiative called the Mental Health Services Administration Blending Initiative & created a website to provide information, videos, training, and other resource information for implementing technology assisted treatments/care to improve the quality and reach of treatment services for persons with substance use disorders. http://sudtech.org/

- The National Frontier and Rural Telehealth Education Center (NFARtec) promotes the use of telehealth technologies to deliver substance use disorder treatment and recovery support to increase access to services and decrease health disparities. http://www.nfartec.org/
NIMH: Guide to Evaluating Behavioral Health Apps

- Ask a trusted health care provider for a recommendation. Some larger providers may offer several apps and collect data on their use. *Heads up: could be a challenge, given that very few providers are trained to assess apps.*
- Check to see if the app offers recommendations for what to do if symptoms get worse or if there is a psychiatric emergency.
- Decide if you want an app that is completely automated or an app that offers opportunities for contact with a trained person.
- Search for information on the app developer. Can you find helpful information about his or her credentials and experience?
- Beware of misleading logos. The National Institute of Mental Health (NIMH) has not developed and does not endorse any apps. However, some app developers have unlawfully used the NIMH logo to market their products.
American Psychiatric Associations 
Evaluation Tool for Apps

• Basics About The Apps
• Privacy & Safety
• Usability
• Data Sharing
Internet Companies & Big Data Machines, Listen Up!

As Much as Necessary & As Little as Possible!

Nothing About US without US!
The Need for Standards & Inclusive Development

- Many government, commercial, provider and consumer organizations have called for standards to guide the development, accessibility, appropriateness, research and safety of internet tools in the health and behavioral health care arena.

- Fundamentally standards development activities could fall into three buckets:
  - Developing a collaborative consumer-focused protocol for inclusive stakeholder participation
  - Creating and promoting standards for information access, privacy and confidentiality, (including informed consent), safety and security in the Internet of Everything Behavioral Health.
  - Creating, monitoring, and promoting standards or guidelines for assessing the quality of behavioral health and human services apps, online tools, technologies, machine learning, and big data and artificial intelligence engines.
What is a Consumer-focused Tech Tool?

- Gives consumers control of their information and how it is shared.
- Saves lives and promotes wellness.
- User Friendly
- Accessible – Culturally, Linguistically, Geographically, Financially
- Useful, not necessarily clinically “proven” to be effective
- Assures Privacy & Security
- Enables real-time communication and data linkages among trusted parties in accord with consumer privacy directives and the consumer-directed system of care.
  - Consumers, providers, payers, accreditors, regulators of private & public systems
Behavioral Health Ground Rules for Access, Confidentiality, Privacy & Security

• All individuals have a right to basic health care, including behavioral health and human services and services supports delivered through internet-enabled and other emerging technologies and tools.

• All individuals have a right to privacy and confidentiality. This right must be maintained in the development and implementation of all behavioral health and human services mobile, computer or web based tools and technologies, as well as with regard to all big data processing, artificial intelligence and machine learning activities within the field.

• All information in behavioral health and human services information must be treated as highly sensitive and be subject to the most stringent security systems available.

Modified from Operational Assumptions of the Workgroup for the Computerization of Behavioral Health & Human Services Records, 2000
IoE for Behavioral Health: Possible Education Standards

- Regulation to support consumer, provider and developer education and outreach on unique behavioral health issues.
- Mandatory provider and IoE developer training.
- Privacy / confidentiality incorporated into job performance reviews of providers and IoE developers using or creating apps and tools in behavioral health.
DOLLARS & SENSE

- Medicaid "FREE" phones
- Medicaid Waivers to cover Telehealth and other Tools
- Insurance Coverage
- IEP coverage
- Rising Costs of Cell Phones, APPS and Tools
- Funds to Develop and Evaluate Apps
- Financial & Business Market Performance
Behavioral Health Tech is Big Business & Big Bucks!

“Back in 2009, venture capital investors backed seven companies in the mental health space. Jump to this year, and VCs have already completed 30 deals for companies working to help people improve mental health and mindfulness. “This year venture capital investors have invested over $500,000,000 in mental health tech. That’s more investment in this space than in the last decade!

Dana Olsen, Pitchbook, June 20, 2018
“Efficacy” & Engagement: funded studies

• Between FY2009 and FY2015, NIMH awarded 404 grants totaling $445 million for technology-enhanced mental health intervention grants. These grants were for studies of computer-based interventions designed to prevent or treat mental health disorders.

• NIMH staff actively review and evaluate research grants related to technology

• Very Useful Database for learning more about past and open studies:

Next Steps

- **Meet Up!**
- **Join Diverse Stakeholder Groups** to discuss, monitor and impact the progress of new technologies, the Internet of Things, and the Internet of Everything in Behavioral Health and beyond.
- **Stay Informed** – dig into your goodie package of links and resources here and join the conversation and the IoE and IoT movements in behavioral health.
- **Find Peace, Balance & Harmony with IT**
BE THE EPIC CHANGE!

• Embrace New Technologies in Behavioral Health to
• Promote Wellness and Improve Care.
• Include All Stakeholders in the Process and
• Continuously Safeguard Privacy & Security for All.
THOUGHT PROVOKING LINKS AND RESOURCES


https://www.wired.com/story/addiction-rehab-is-broken-can-technology-fix-it/

https://www.wired.com/story/embattled-tech-companies-charge-deeper-into-health-care/

https://www.cfr.org/event/future-us-data-privacy-after-gdpr

http://www.who.int/ehealth/programmes/governance/en/

https://jr.brainpop.com/artsandtechnology/technology/internetsafety/

https://www.screenagersmovie.com/


https://www.store.samhsa.gov/apps/disaster/

https://www.newamerica.org/oti/

https://www.digitalinclusion.org/news/

