

FCSSBC October 17, 2018

## Technology and Mental Wellness

A Tech Talk (in three acts)

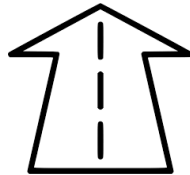
By Merlyn Horton

## Technology and Mental Wellness

- Act 1 - The Pros 11:00am - 11:20am
- Act 2 - The Cons 2:00pm - 2:30pm
- Act 3 - The Future 4:00pm - 4:30pm

## Act 3 - The Future (25)

- CA Resource for using technology therapeutically
- ASMR
- Video Games
- Passive Symptom Tracking
- Virtual Reality Therapy
- Artificial Intelligence Apps



Through a series of stories, illustrates how online technologies can address different issues

**MENTAL HEALTH, TECHNOLOGY AND YOU**

- Abigail has **struggled with body image issues since she was young**. At 16, she started purging. She knew she needed help so she started looking online...
- Hannah **noticed she was drinking more**, feeling worse and starting to think about suicide. Then her cousin told her about a way to get help...
- Aditya began **experiencing bipolar disorder symptoms** after moving from India to Canada. When a major depressive episode left him unable to care for his children, his wife started looking for new solutions...
- Benoit **felt unfocused, anxious and cut off** from his friends after coming home from university. After his symptoms led to a full-blown panic attack, his doctor referred him to an online therapist...
- Phillip has **never been comfortable with his own sexuality**. At a high-stress time, racked by internalized homophobia, he found a crisis chat service online and things started to change...
- Jacqueline never imagined she would spend her 70s alone. **Angry, depressed and lacking the energy** even to clean her apartment, she thought she'd never feel better. But a surprising suggestion changed all that...

## WHAT TECHNOLOGIES CAN BE USED TO SUPPORT MENTAL HEALTH?

### SOCIAL MEDIA AND PEER SUPPORT PLATFORMS

Social media, online chats and other technologies that let people connect and talk to others can be powerful tools for mentoring, empathetic conversations and peer support.

### COMPUTERIZED TREATMENTS, RESOURCES AND MOBILE APPS

Many treatment programs can now be followed online – on a computer, smartphone or tablet – as downloadable programs or apps. Some of these may be guided by a clinician or coach, while others are completely computer-based.

### TELEHEALTH/TELEMEDICINE

A wide range of mental health services and supports is available over the phone or through voice or video chat on a smartphone, tablet or computer – giving access to care from home, a clinic or health centre, or a mobile device.

### WEARABLE TECHNOLOGY

Like the name suggests, "wearable" technology is technology you can wear on your body – like a watch, armband or anklet. These devices can measure and track your health statistics and monitor your wellbeing.

### VIRTUAL REALITY (VR)

Virtual reality or "VR" uses special equipment like goggles, helmets and gloves with sensors and screens to let you experience simulated environments. VR-based psychotherapy is likely going to be used more and more often as part of therapies to help people work through mental health challenges such as post-traumatic stress disorder (PTSD).

### ROBOTS

Robots can come in all shapes and sizes, from machines that simulate pets like cats and dogs to ones that administer certain kinds of care in health settings. Interacting with robots has been shown to reduce loneliness and increase social interactions.

### GAMING

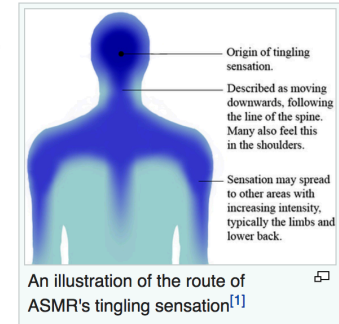
Video or computerized games can be used as part of mental health therapies to help people learn about their problems or illnesses and even help them face and overcome challenges.

### ARTIFICIAL INTELLIGENCE (AI)

As computers continue to get "smarter" they can perform tasks that would otherwise require a human to think through – like diagnosing mental health problems or illnesses based on how a person responds to a set of questions or tracking a person's improvement.

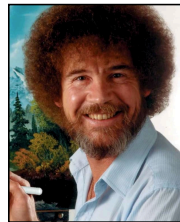
## Self-Soothing with ASMR

- Autonomous sensory meridian response (ASMR) is an experience characterized by a static-like or tingling sensation on the skin that typically begins on the scalp and moves down the back of the neck and upper spine.



## ASMR - Urban Dictionary

- The sole purpose of ASMR is to relax people.
- The ASMR community is constantly growing on Youtube.
- Ideally, ASMR videos are meant to give the viewer a relaxing tingle at the back of their head and/or spine.



## What Is ASMR

*For quality purposes*  
please use headphones during this video

Apr 20 2017

- Using game features in non-game contexts, computers can learn to build personalized mental- and physical-therapy programs that enhance individual motivation
- They seek to use machine learning to train computers to develop personalized mental or physical therapy regimens — for example, to overcome anxiety or recover from a shoulder injury — so many individuals can each use a tailor-made program.
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## Heal Your Brain with Video Games



**TEDArchive**

Previously unpublished talks from TED conferences

Enjoy this unedited talk by Jane McGonigal  
Recorded at TED2014 All-Stars

## The Cons of Mental Health Apps

### (Lack Of) Research on Mental Health and Technology

- Effectiveness - Need for scientific evidence

Rank	App	Notes	Rank	App	Notes
1	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life	4	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life
2	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life	5	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life
3	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life	6	Recovery	Recovery: A Self-Help Guide to Coping with Depression and Anxiety Using a Virtual App for Life
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Technology and the Future of  
Mental Health Treatment



Transforming the understanding  
and treatment of mental illnesses.

## Heal Your Brain with Video Games

- Snow world - 30-50% reduction in pain, better than morphine
- Tetris - interrupt ptsd
- Tree Project - increase environmental behaviours - 25% less paper product after playing
- SuperBetter - turn real life challenges into a game, eliminates 6 symptoms of depression in 6 weeks

**TEDArchive**

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## SuperBetter - How It Works



## Virtual Reality for Patient Care



### Enriched exposure therapy

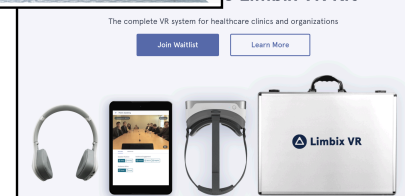
Therapists can gradually expose patients to phobias or sources of distress to increase a patient's anxiety tolerance to distressing situations.

## Better patient experiences

Teleport patients around the world to the scene of an important life event or take them to tranquil nature environments where they can relax.

### the Limbix VR Kit

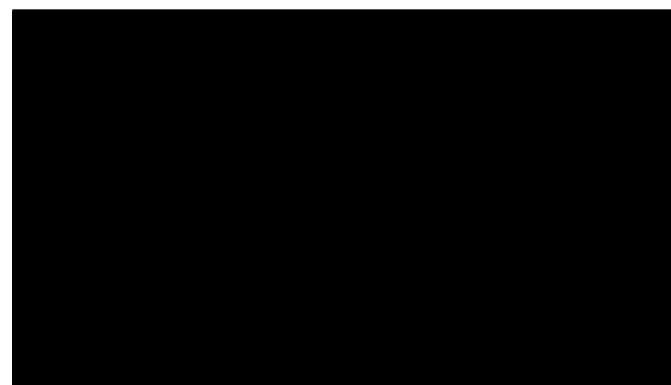
The complete VR system for healthcare clinics and organizations



## Disorders Treated By VR Therapy

- Post Traumatic Stress Syndrome (PTSD)
- Attention Deficit Disorder (ADD)
- Attention Deficit Hyperactivity Disorder (ADHD)
- Obsessive Compulsive Disorder (OCD)
- Agoraphobia (fear of places, especially public places)
- Acrophobia (fear of heights)
- Arachnophobia (fear of spiders)
- Pteromerhanophobia (fear of flying)
- Glossophobia (fear of public speaking)
- Panic attacks
- Sleep disorders
- Autism
- Pain management
- Stage fright
- Mood disorders
- Addictive behaviors
- The list of phobias and other disorders numbers in the hundreds. Fortunately, VR can effectively treat the majority of these economically and effectively.

## Virtual Reality Therapy





## AI Mental Health/ Substance Misuse Assessment

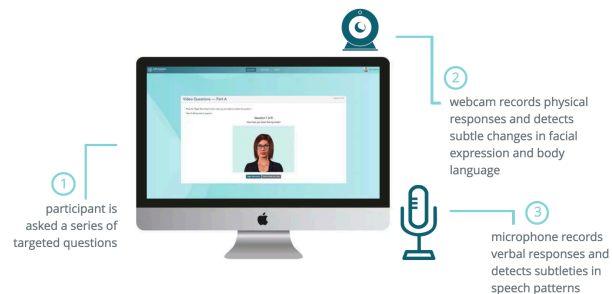


- AiME (/ayy-mee/), Artificial Intelligence Mental Evaluation, is a 5-minute evaluation for objectively assessing mental health and predicting opioid addiction
- Machine learning (ML) algorithms analyze facial expression, vocal prosody, and speech content to provide a precise, standardized report on risk of depression, anxiety, and addiction
- AiME combines the use of cutting-edge data collection, Machine Learning, and mental health reporting to revolutionize mental health tracking

## AiME - AI for Mental Health and Addiction



AiME is a secure evaluation that can be completed at the doctor's office or at home



## PARO Therapeutic Robot

- PARO is an advanced interactive robot developed by AIST, a leading Japanese industrial automation pioneer. It allows the documented benefits of animal therapy to be administered to patients in environments such as hospitals and extended care facilities where live animals present treatment or logistical difficulties.
- PARO has been found to reduce patient stress and their caregivers
- PARO stimulates interaction between patients and caregivers
- PARO has been shown to have a Psychological effect on patients, improving their relaxation and motivation
- PARO improves the socialization of patients with each other and with caregivers
- World's Most Therapeutic Robot certified by Guinness World Records



## Paro - Robot Baby Seal



## Passive Symptom Tracking

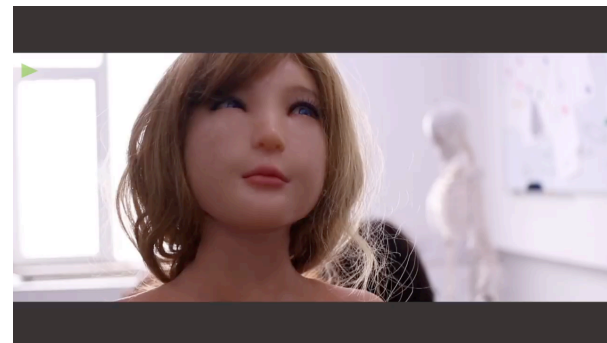
- A lot of effort is going into developing apps that can collect data using the sensors built into smartphones. These sensors can record movement patterns, social interactions (such as the number of texts and phone calls), behavior at different times of the day, vocal tone and speed, and more.
- In the future, apps may be able to analyze these data to determine the user's real-time state of mind. Such apps may be able to recognize changes in behavior patterns that signal a mood episode such as mania, depression, or psychosis before it occurs.
- An app may not replace a mental health professional, but it may be able to alert caregivers when a client needs additional attention. The goal is to create apps that support a range of users, including those with serious mental illnesses.

## The next steps....

- Wearable tactile body suits (think AppleWatch but a whole sleeve)
- Companion robots



## Meet the next-generation sex doll: This smarty can talk, play music & turn on dishwashers



- Contains nudity

## DOLLED UP Inside the creepy China sex doll factory that's making dirty-talking robots for randy Americans

You can have post-romp pillow talk with your robot lover thanks to new technology from Chinese firm WMDOLL.

By James Cox

26th July 2018, 10:10 am | Updated: 5th October 2018, 10:45 am

ASIA PACIFIC / SCIENCE & HEALTH

### Smart bots: China's sex doll makers jump on AI drive

REUTERS

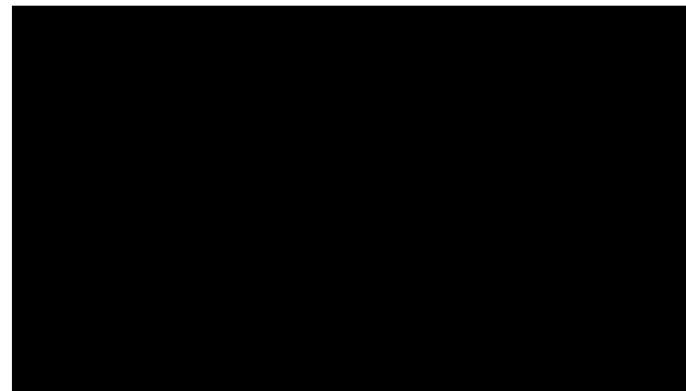
#### Inside China's disturbing sex robot factory where perverts can order custom AI dolls the size of children

- The robots are made by Shenzhen Atall Intelligent Robot Technology
- The company is based in China's Guangdong Province
- Developers say these dolls have body sensors that make them human-like
- The firm says French customers like robots with blond hair and hairless genitals

By PHOEBE WESTON FOR MAILONLINE

PUBLISHED: 06:21 EDT, 24 May 2018 | UPDATED: 10:39 EDT, 24 May 2018

## Three generations of memories



• 3:00 mins

## What are you going to do?

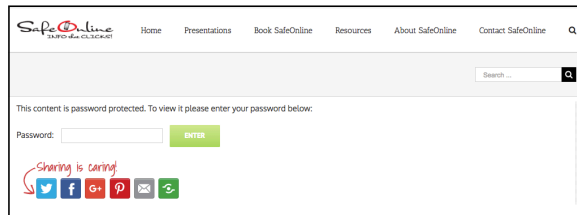
- Identify/get ready for these changes
- Educate yourself, personally AND professionally
- Adapt your funding/structural frameworks
- Train your staff
- Educate your clients



## Where you surprised? What will you take away from this talk?

- Online pornography
- Online counselling
- Virtual Reality Therapy
- Excessive Screen Time
- Artificial Intelligence
- Online addiction
- Self-help education about mental wellness?
- Robots?
- Exclusion of marginalized people?
- Provides comfort to isolated people?

## Webpage



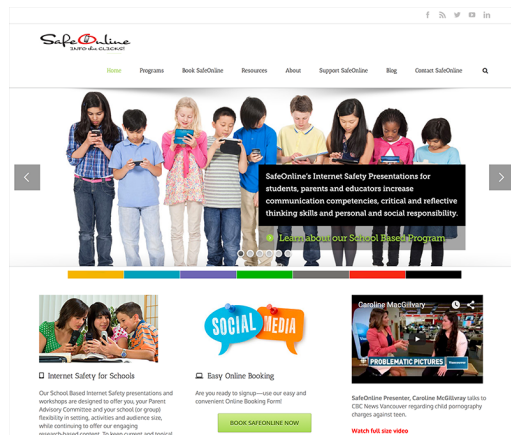
- <https://www.safeonline.ca/presentation-handouts/fcssbc-2018/>
- Password: fcscsbc2018

## Webpage

Act 1 – The Pros 11:00am – 11:20am

- Current Trends in App Development, Creative research and engineering teams are combining their skills to address a wide range of mental health concerns.
- The Pros and Cons of Mental Health Apps. Experts believe that technology has a lot of potential for clients and clinicians alike.
- 3 Ways Technology Is Helping Improve Mental Health, April 14, 2016
- 750words.com
- I tried to treat my depression with AI therapy
- The potential of AI therapy bots in mental health care
- The Science of Happiness Course
- Authentic Happiness website, a University of Pennsylvania website developed by the Positive Psychology Center.
- ReachOut Orb
- Black Dog Institute, Health and Wellness Portal
- Happily: Science-Based Activities and Games,
- Best Meditation Apps of 2018
- Pacifica Anxiety App
- The Best Alcoholism Apps of the Year
- 7 Cups, and How It Works
- Big White Wall, and a review
- iBpercent
- Better Help
- MyPsychTES
- Gaming can improve physical and mental therapy
- 4 Important Mental Health Care Technology Innovations

## [www.safeonline.ca](http://www.safeonline.ca)



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