U.S. Department of Health & Human Services • National Institutes of Health

National Center for Complementary and Integrative Health

Meet People Where They Are: Leveraging Technology in Trials with Digital Interventions to Optimize Study Success and Avoid Widening the Digital Divide

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Objectives

- Appreciate digital technology's growing role in health research, including complementary and integrative health
- Identify factors that impact a digital tool's appropriateness for a study
- Obtain practical tips for optimizing technology use, reducing the digital divide, and navigating unforeseen challenges
- Recognize potential issues regarding privacy, confidentiality, safety, data d sharing, and product regulation

Agenda

- Digital technology in health research
- Digital technology as a tool: pros and cons
- Speaker presentations on leveraging digital technology for different purposes, populations, and settings
  - Factors to consider
  - Lessons learned
  - Best practices
- Discussion and Q&A

Technology's Footprint in Health Research (1)

Many clinical trials can now be conducted 100% remotely

- Multiple NIH Centers and Institutes have mobile health (mHealth) funding opportunities
- Widespread (but *not* universal) smartphone and internet access[1]

1. https://www.pewresearch.org/internet/fact-sheet/mobile

Technology's Footprint in Health Research(2)

Development of health-focused digital tools (e.g., mHealth, wearables, telehealth, digital therapeutics) has accelerated

- COVID-19 pandemic, staff shortages, cost savings
- $200+ Billion industry[1]

1. N Kasoju, 2023. 10.1007/s40012-023-00380-3

Technology's Footprint in Health Research (3)

- Increasing adoption by health care providers and researchers[1]
- Integrating technology into clinical trials may become the new "norm"

1. OT Inan, et al. 2020 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7395804/

Tools: Usefulness Depends on Context

- Tools are not inherently good or bad, effective or ineffective
  - Qualities and value are contextual; depend on specifications and usage
- Tools are not one-size-fits-all
  - The right tool can be enormously impactful
  - An unsuitable tool can be burdensome and detrimental

Tools: Context Matters

Fire

Useful

Not Useful

Scalpel

Useful

Not Useful

Digital Technology Is a Tool

Context is especially important for digital technology

- Who will be using the tool, and why?
- For how long, how frequently?
- What additional resources are needed for use?
- Appropriateness for intended purpose?
- Are there regulatory, legal, privacy requirements?

Possible Pros and Cons of Digital Technology

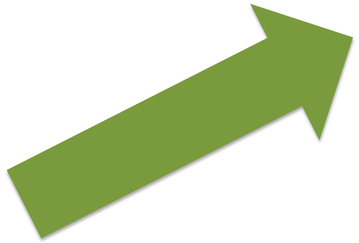
Pros

- Reduces human resource needs
- May increase intervention access, retention
- Reduces participant travel
- Easier interface with databases, EHR
- May allow larger recruitment
- Tailoring tool to study objectives, population

Cons

- No/less personal contact with study team
- Tool might not be validated
- Requires some digital, health literacy
- Inappropriate for some health issues
- May require additional participant resources
- Privacy challenges
- Tool customization may cost $$
- Devices lack interoperability
- Software becomes outdated, unavailable

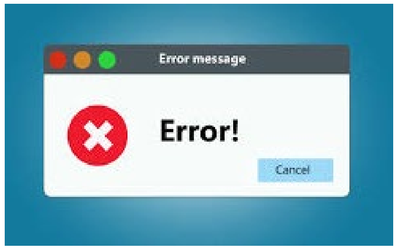
Digital Technology



Success!

Hard to Use

Resource Intensive



Unreliable

Bad Programming

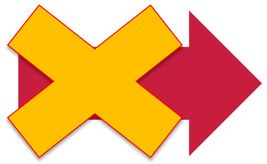
Low Adoption

Not Secure

Early, frequent stakeholder feedback

Usability testing

Digital Technology



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Data/broadband support

Security features

Lower-tech options

Questions?