

Prospective Application of the Promoting Action on Research in Health Services (PARIHS) Framework to Improve Behavioral Health Providers' Use of Mobile Applications in the Military Health System (MHS)



Pratt, K., Gray, A., & Houston, J.
Psychological Health Center of Excellence, Defense Health Agency (Research and Development-I9), Silver Spring, MD.

INTRODUCTION

The Departments of Defense and Veterans Affairs (DoD and VA, respectively) are leaders in the development and evaluation of mobile health (mHealth) technologies designed to improve mental health. Emerging evidence suggests that mental health mobile apps can provide self-management tools to those who might not otherwise access treatment [1], improve treatment efficiency [7, 16], and may improve clinical outcomes for a variety of mental health conditions including depression, anxiety, and posttraumatic stress disorder [2, 3].

Despite these potential benefits, the clinical adoption of mobile mental health apps has been limited [14]. While patients and providers have reported generally favorable attitudes towards mobile mental health [8], a variety of barriers may impede the integration of mobile apps into clinical care [9, 14]. Research exploring barriers to the use of mHealth tools suggests that barriers across organizational levels including cost, privacy and security concerns, and providers' lack of familiarity with and need for training in the use of mHealth tools significantly impact providers' decisions to implement mHealth tools in behavioral health care delivery [14].

To facilitate behavioral health providers' integration of mobile apps into clinical practice and to inform understanding of the barriers and facilitators to the integration of mobile apps into behavioral health care, the DoD Practice-Based Implementation (PBI) Network conducted the Technology (Tech) into Care Pilot.

METHOD

To conduct the Tech into Care pilot, the PBI Network used a systematic model that represents implementation as an iterative process occurring through a series of five coordinated and progressive stages: Pilot Selection, Engagement, Dissemination and Training, Facilitation and Monitoring, and Evaluation. The Promoting Action on Research Implementation in Health Services (PARIHS) framework guided the development and execution of the pilot [15]. Evidence-based implementation strategies were applied to facilitate the uptake and integration of mobile apps into clinical care. Table 1 shows the implementation strategies and links to PARIHS constructs for each pilot stage.

Stage	Implementation Strategies	Link to PARIHS
Pilot Selection	Develop a formal implementation blueprint Use advisory boards and workgroups	Evidence Context
Engagement	Assess for readiness and identify barriers and facilitators Tailor strategies to overcome barriers and honor preferences Involve executive boards Identify and prepare champions	Evidence Context
Dissemination & Training	Model and simulate change Develop effective educational materials Distribute educational materials Conduct educational meetings Make training dynamic	Evidence Facilitation
Facilitation & Monitoring	Conduct ongoing training Provide ongoing consultation Audit and provide feedback Remind clinicians Obtain and use patient/consumer feedback Purposefully reexamine the implementation Capture and share local knowledge Organize clinician implementation team meetings	Context Facilitation
Evaluation	Audit and provide feedback Use data experts Capture and share local knowledge Purposefully reexamine the implementation Conduct cyclical small tests of change	Context

Table 2. Provider Demographics

Variable	Training Participants (n = 95)	Pilot-Registered Participants (n = 53)	Training-Only Participants (n = 42)
Provider Role			
Psychiatrist	14.74%	7.55%	23.81%
Nurse	5.26%	5.66%	4.76%
Psychologist	27.37%	32.08%	21.43%
Social Worker	25.26%	33.96%	14.29%
Counselor	12.63%	18.87%	4.76%
Psych Tech	11.58%	1.89%	23.81%
Other (e.g., Students)	3.16%	0.00%	7.14%
Age			
17-24	8.42%	0.00%	19.05%
25-34	26.32%	24.53%	28.57%
35-44	26.32%	22.64%	30.95%
45-54	24.21%	33.96%	11.96%
55-64	12.63%	15.09%	9.52%
65-74	1.05%	1.89%	0.00%
Missing	1.05%	1.89%	0.00%
Service			
Air Force (4 out of 7 sites)	54.74%	49.06%	61.90%
Navy (3 out of 7 sites)	45.26%	50.94%	38.10%

A brief training and implementation program positively impacted Military Health System behavioral health providers' knowledge, feelings of preparation, and comfort integrating mobile apps into care.



POINT OF CONTACT: LCDR Jorielle Houston, Ph.D., Psychological Health Center of Excellence (PHCoE), Jorielle.b.houston.mil@mail.mil

RESULTS

Figure 1. Training Provider Pre- and Post-Training Knowledge Question Scores

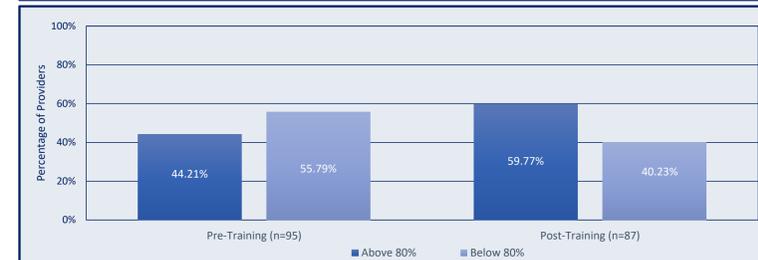
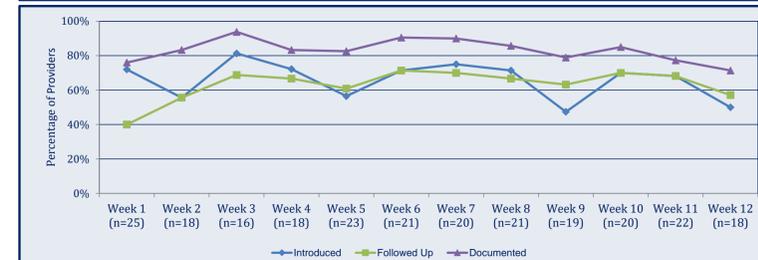


Figure 2. Percentage of Providers Who Reported Feeling Prepared and Comfortable Integrating Mobile Apps



Figure 3. Percentage of Providers Who Introduced, Followed Up and/or Documented Use of Mobile Apps



DISCUSSION

- The Tech into Care approach is a feasible approach to training providers in the integration of mobile apps into care within the MHS
- Although behavioral health providers are interested in integrating technology into care, their ability to make this change is limited by systemic challenges related to time management, resource availability, and resource allocation
- Many of the challenges impacting the integration of technology into care also impact the delivery of evidence-based behavioral health care within the MHS more generally
- Patient buy-in, leadership support, and positive treatment outcomes motivate and facilitate providers to make changes to their clinical practice that support improvements in care delivery

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