

## INTRODUCTION

By integrating smartphone apps into standard treatment, clinicians may potentially improve treatment quality, expedite its process, and reduce barriers to access.

Smartphone apps can complement PTSD treatment in a variety of ways.<sup>1-2</sup>

- e.g. Homework tools, psychoeducation

Recent research has shown that apps are a feasible method for enhancing standard treatment for PTSD.<sup>3</sup>

- 76% of Veterans receiving outpatient treatment for PTSD reported owning a smartphone<sup>4</sup>
- 85% reported interest in at least one potential use of an app as part of therapy<sup>4</sup>
- VA clinicians trained in evidence-based treatment for PTSD generally find treatment integration of smartphone apps to be favorable<sup>5</sup>

There are few comprehensive resources available to find information on smartphone apps that can be used in collaboration with standard treatment for PTSD.

References: <sup>1</sup>Price et al., 2014; <sup>2</sup> Donker et al., 2013; <sup>3</sup> Kuhn et al., 2014; <sup>4</sup> Erbes et al., 2014; <sup>5</sup> Kuhn et al., 2014

## METHOD

**Systemic Review of Publically Available Smartphone App Information**

This study utilized an extensive web search to locate as many relevant smartphone apps for individual treatment of PTSD as possible with a variety of web locations and search criteria.

Web search for relevant apps:

- Search Engines,
  - e.g., Google.com
- Online Forums and Communities,
  - e.g., Reddit.com
- App Rating Sites,
  - e.g., Mobileaction.com
- Government Mobile App Sites
  - e.g, t2health.dcoe.mil

Search terms included either “App” or “Apps” and the following:

- Words related to PTSD
  - e.g., Trauma
- Symptoms of PTSD
  - e.g., Anger
- Treatments specific to PTSD
  - e.g., Cognitive Processing Therapy
- Social support for PTSD
  - e.g., PTSD social support

Mental health or treatment apps had to be relevant to PTSD.

- Could not be specific only to other diagnoses

Apps for PTSD symptoms (e.g., insomnia) had to either be specific to PTSD or generalizable across mental health conditions.

Information collected on each app is as follows:

- Utility
  - Designed for Treatment Integration**
  - Education
  - Exercises
  - Symptom and Progress Tracking
  - Outside Professional Support
  - Outside Peer Support
- Cost
- Minimum Software Required
- Number of Reviews
- Overall Rating

## Demographics of the Sample

Sample Characteristics of Currently Available Apps								Total Apps		iOS		Android	
App Theme													
1	PTSD	0	4	7	2	1	1			6	9		
2	Mental Health (including PTSD)	0	2	2	5	0	1			5	4		
3	VA PTSD Treatment	2	4	9	4	0	0			7	5		
4	Mindfulness and Relaxation	0	5	21	5	2	1			21	16		
5	Anger	0	3	6	1	0	0			3	4		
6	Insomnia	0	3	10	3					11	9		
7	Peer Support	0	2	0	0	1	5			4	4		
Total		2	23	55	20	4	9		113	57	51		

## RESULTS

**113 apps were found and included in this review**

**Treatment Integration:** Of these, only **TWO** were designed explicitly for integration with standard treatment

**CPT Coach**

- Companion to standard CPT treatment
- Allows for clinicians and patients to create and adjust homework assignments
- Explicitly not for standalone treatment
- Includes psychoeducation, homework forms, reminders, and adherence tracking

**PE Coach**

- Companion to standard PE Treatment
- Allows for clinician and patient to create and adjust homework assignments
- In-session recording for homework use
- Includes psychoeducation, homework forms, reminders, and adherence tracking
- Clinician manual available

Treatments Used for PTSD at VA								Designed for Treatment Integration		Education		Exercises		Symptom and Progress Tracking		Outside Professional Support		Outside Peer Support		iOS		Android		Cost of App (US Dollars)		Minimum iOS Software Version		Overall Number of iOS Ratings		Overall iOS Rating (out of 5)		Minimum Android Software Version		Overall Number of Android Ratings		Overall Android Rating (out of 5)		
App Name																																						
1	CPT Coach	X	X	X	X															X				0	7.1	6	3	NA	NA	NA								
2	PE Coach	X	X	X	X															X	X			0	4.3	14	4	NA	95	4								
4	eCBT Trauma		X	X																X				0.99	3	7	2.5	NA	NA	NA								
5	ACT Coach		X	X	X															X				0	8	NR	NR	NA	NA	NA								
6	ACT Companion		X	X																X	X			9.99	7	10	4	4	62	4.4								
7	Anxiety Release Based on EMDR			X																X	X			4.99	5	8	4	4	41	4.5								
8	EyeMove X: EMDR Trauma Therapy			X																	X			0	NA	NA	NA	4.1	29	3.9								
9	EyeMove 1: EMDR Trauma Therapy			X																	X			0	NA	NA	NA	4	50	3.6								
								NR = No Reviews Available		NA = Not Applicable																												

**In Development:** Five apps currently in development were found that met inclusion criteria.

- Descriptions did not indicate integration with in-office treatment

Unreleased Apps								Designed for Treatment Integration		Education		Exercises		Symptom and Progress Tracking		Outside Professional Support		Outside Peer Support		iOS		Android		Cost of App (US Dollars)		Minimum iOS Software Version		Overall Number of iOS Ratings		Minimum Android Software Version		Overall Number of Android Ratings		Overall Android Rating (out of 5)	
App Name																																			
1	vetChange		X	X	X		X											X	X					0	NA	NA	NA	NA	NA	NA					
2	Trauma Recovery Coach			X					X	X								X	X					0	NA	NA	NA	NA	NA	NA					
3	STAR Coach			X					X									X						0	NA	NA	NA	NA	NA	NA					
4	Insomnia Coach		X	X	X				X									X						0	NA	NA	NA	NA	NA	NA					
5	ALMS			X					X									X						0	NA	NA	NA	NA	NA	NA					
								NR = No Reviews Available		NA = Not Applicable																									

## Limitations

The web search used to find relevant apps for this study may have missed relevant apps to this study

Apps specific to other conditions that still could still be useful for someone with PTSD, or in treatment for PTSD may have been excluded

- Apps for disorders whose symptoms overlap with PTSD (e.g., depression app to treat insomnia)

Information collected is only as current as the time of data collection.

- Variables are subject to update

Metrics used were those made publicly available

- Number of reviews and rating score may not represent the full extent of app usage.

**Variation:** Apps collected were from a variety of sources.

- Emergent themes were added during data collection (e.g., Anger)

**Use:** 111 of the apps were designed to be stand-alone in what utilities they offered.

- Standalone treatments for PTSD or its symptoms (e.g., PTSD Coach)
- Symptom management, skills training, psychoeducation, etc...

**Cost:** Almost all apps were free or inexpensive to download

**Ratings:** Mindfulness/relaxation apps were the most abundant, highly rated, and frequently rated.

- Most mindfulness/relaxation apps offered the same features (e.g., meditation exercises)

Apps Specific to PTSD								Designed for Treatment Integration		Education		Exercises		Symptom and Progress Tracking		Outside Professional Support		Outside Peer Support		iOS		Android		Cost of App (US Dollars)		Minimum iOS Software Version		Overall Number of iOS Ratings		Minimum Android Software Version		Overall Number of Android Ratings		Overall Android Rating (out of 5)	
App Name																																			
1	PTSD Coach								X		X		X		X					X		X			0	8	115	4	2.1	607		3.6			
2	PTSD Eraser										X									X					5.99	3	32	4.5	NA	NA		NA			
3	Vital Tones PTSD										X									X		X			0	5.1.1	NR	NR	2.2	1	5				
4	Vital Tones PTSD Pro										X									X		X			9.99	5.1.1	NR	NR	2.2	NR	NR				
5	PTSD Symptoms & Suggested Treatment								X										X		X			2.99	6	NR	NR	2.3.3	NR	NR					
6	Fighting PTSD								X											X				0.99	NA	NA	NA	2.1	2		3				
7	Heal Post Traumatic Stress Disorder										X									X				4.99	NA	NA	NA	1.6	NR	NR					
8	PTSD Free										X								X					0	7	NR	NR	NA	NA	NA	NA				
9	PTSD Stops Here										X									X				0	NA	NA	NA	2.3	12		4.6				
10	PTSD Checklist												X							X				0	NA	NA	NA	2.2	42		3.4				
11	PTSD Support								X						X					X				0	NA	NA	NA	2.2	2		3				
								NR = No Reviews Available		NA = Not Applicable																									

**Barriers to Accessibility:**

Some apps required recent iOS or Android to be used, which may not be an option for older smartphones

- E.g., PTSD Coach, iOS 8.1

While apps were generally inexpensive to download, several included in-app purchases or equipment

- This was especially prevalent for Mindfulness/Relaxation apps, in which lessons could cost up to \$20 each

## Conclusions & Implications

While there are several smartphone apps that offer stand-alone clinical utility, very few apps include components specific to treatment integration.

- Given the potential benefits to treatment for PTSD by integrating smartphone apps, these results may imply that apps are an underdeveloped method of increasing access and continuity of care past regularly scheduled office visits

- There may be limitations to access to some apps (e.g., software requirements)

- This review did not find any apps in development that are being built specifically for treatment integration

**The challenge of this conclusion is to determine how to best integrate information from apps into on-going treatment.**