



Electronic Problem-Solving Training (ePST) after Traumatic Brain Injury

A Pilot Study of Three Delivery Modalities

Shannon B. Juengst¹ Matthew Schmidt² Yueqi Weng²

¹ Brain Health & Rehabilitation Research Center, TIRR Memorial Hermann, Houston, TX · ² University of Georgia, Athens, GA

Contact
Shannon B. Juengst, PhD, CRC
shannon.juengst@memorialhermann.org

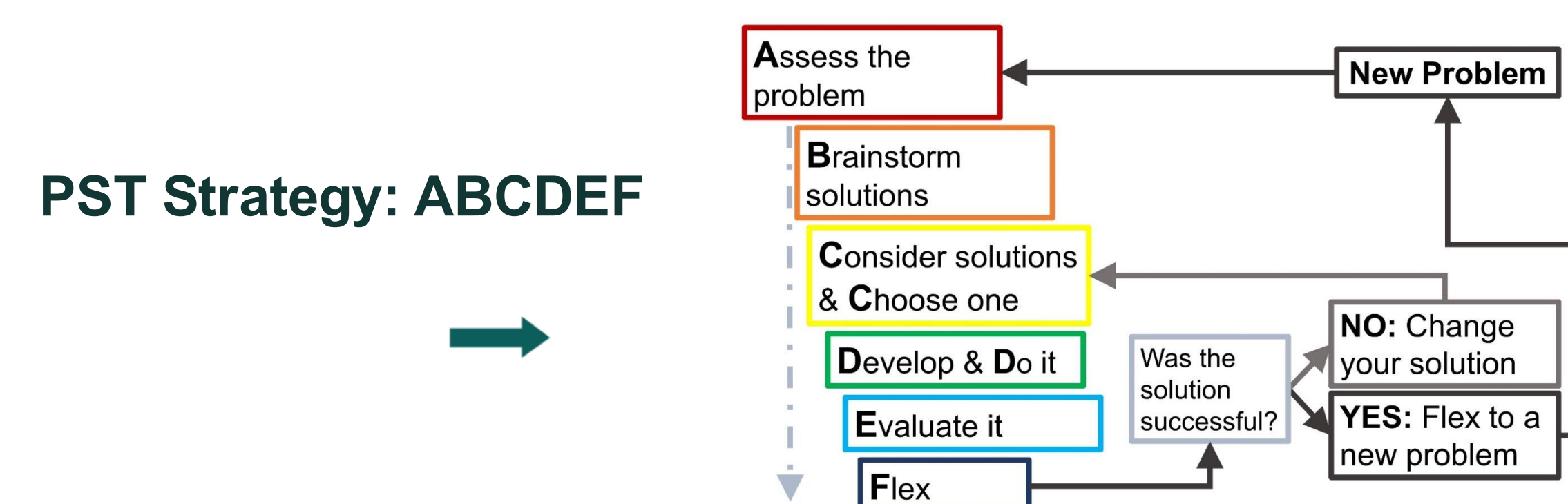


A special acknowledgement and thank you
to all the members of our ePST Community
Participatory Board!

Why ePST?

Problem-Solving Training (PST) improves problem-solving, mood, and goal attainment, but is usually delivered by a trained clinician. Adults with TBI face geographic, financial, scheduling, and stigma barriers to accessing care.

A **digital, self-guided** version of PST removes (or reduces) scheduled clinician time, expanding its accessibility to those facing barriers. Short microlearning lessons ease cognitive fatigue, and co-design improves accessibility, acceptability, and relevance for people with TBI existed. So, we built ePST.¹



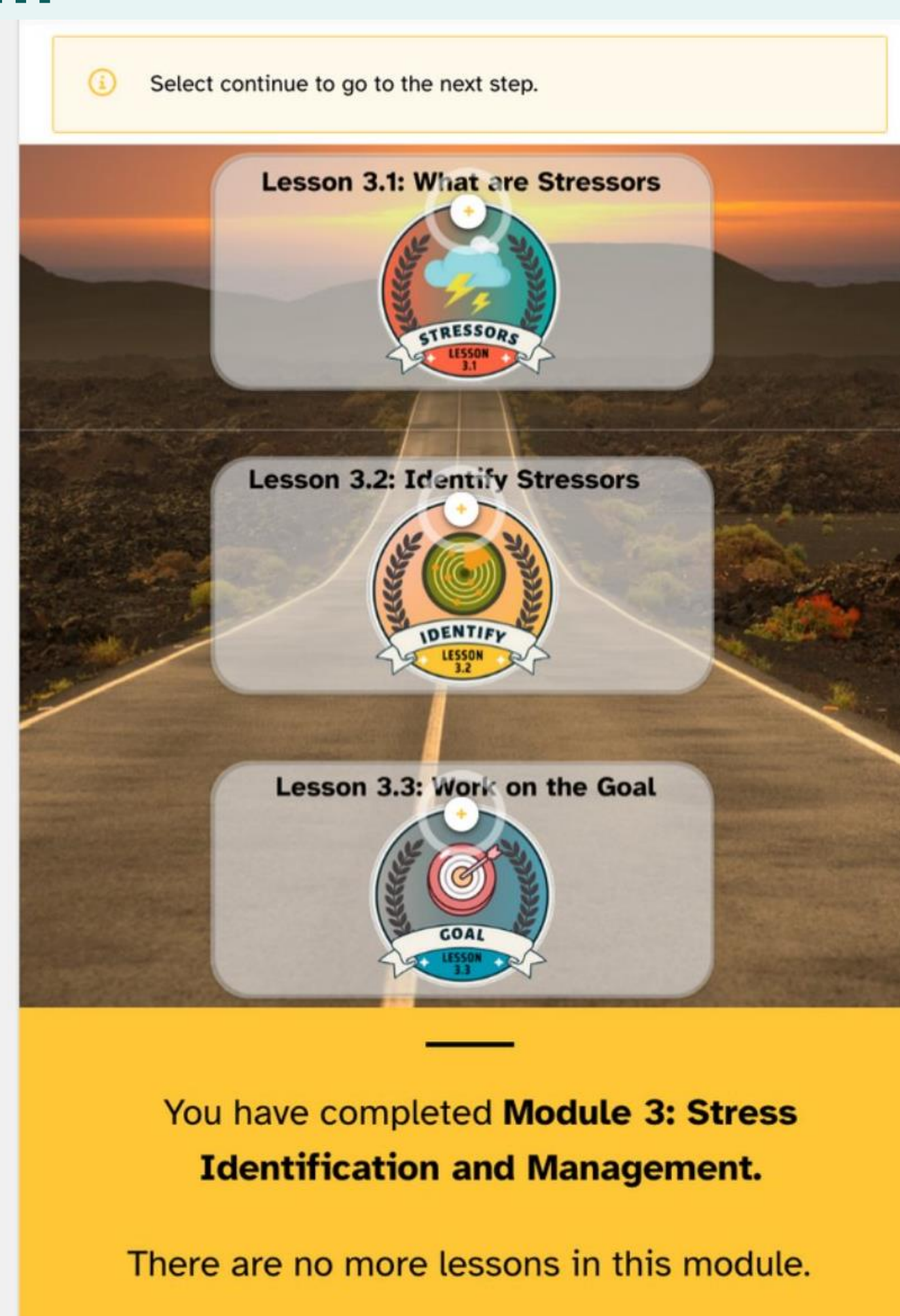
Three delivery formats

Traditional PST	Hybrid ePST	Self-guided ePST
6 coach sessions	5 online modules	5 online modules
~45 min each	+ 3 coach sessions	+ STEPS app
Full coach support	Half the coach time	Fully self-guided

All three teach the same six-step ABCDEF strategy · delivered remotely · 3-month follow-up

The ePST platform

Five self-guided learning modules with 1-8 microlearning lessons each, at discoverepst.com.² Lesson badges, plain language, and a 5th-grade reading level keep each lesson short and low-burden. ePST lessons are mobile-first design but run on any device and on low bandwidth.

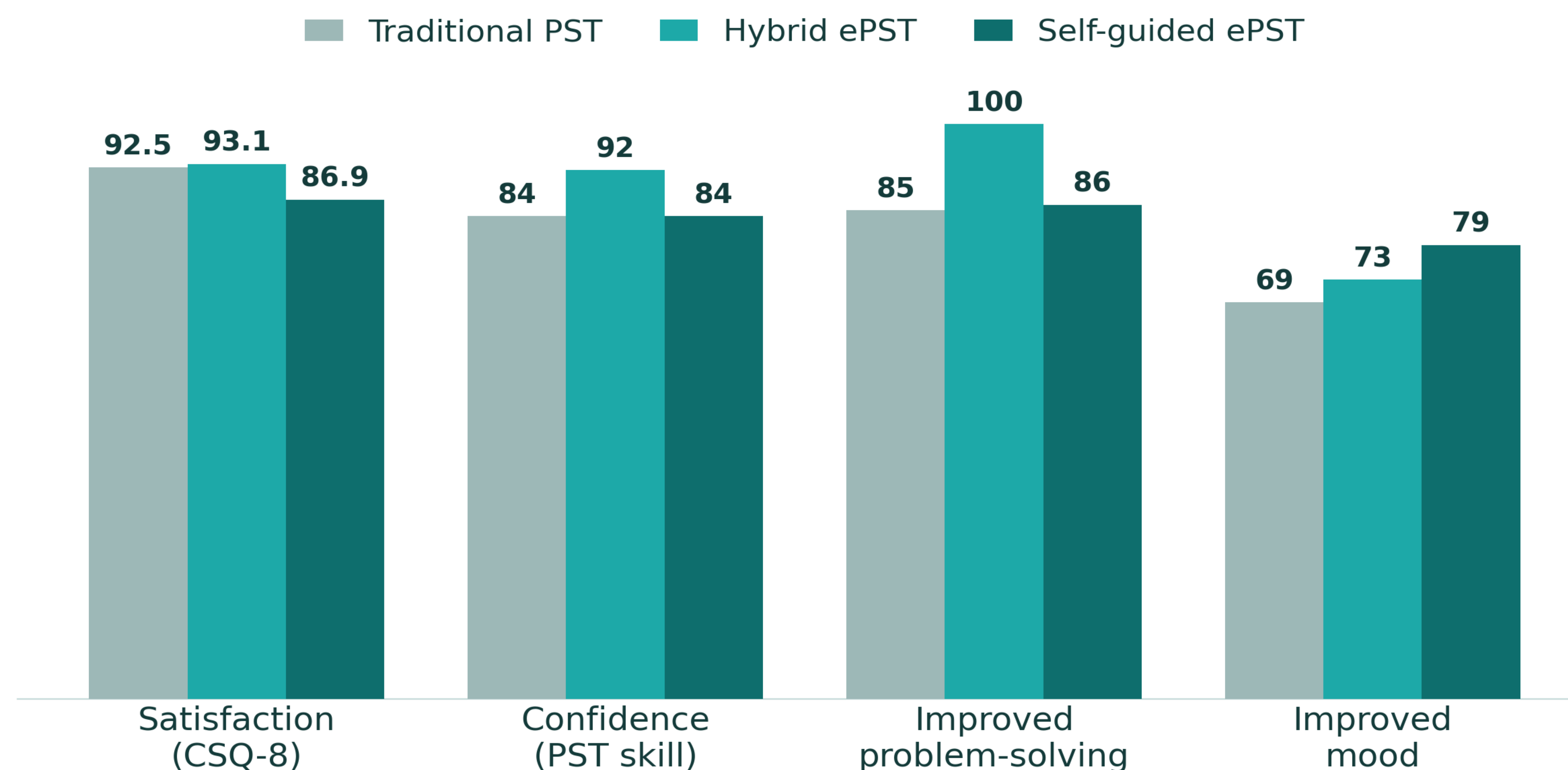


All three delivery formats yielded overwhelmingly positive outcomes. **Hybrid ePST** was consistently rated the best, with half the coach time of the evidence-based Traditional PST.

ePST was feasible, highly usable, and well-liked by community-dwelling adults with chronic TBI.

100% completed ePST modules (with some prompting support)
89.1% coach sessions done
<15 min Per ePST lesson (most <10 minutes)

Outcomes by delivery format



Satisfaction & confidence shown as % of each scale's maximum; benefit as % reporting improvement.

Bottom line: Hybrid ePST was consistently rated the best. It is more efficient, with 3 coach sessions instead of 6 (Traditional), and more favorable to individuals with TBI than fully self-guided ePST. Hybrid ePST pairs digital reach with coach accountability and support.

² Explore ePST
discoverepst.com



¹ ePST development paper
Schmidt et al. 2026 · JMIR



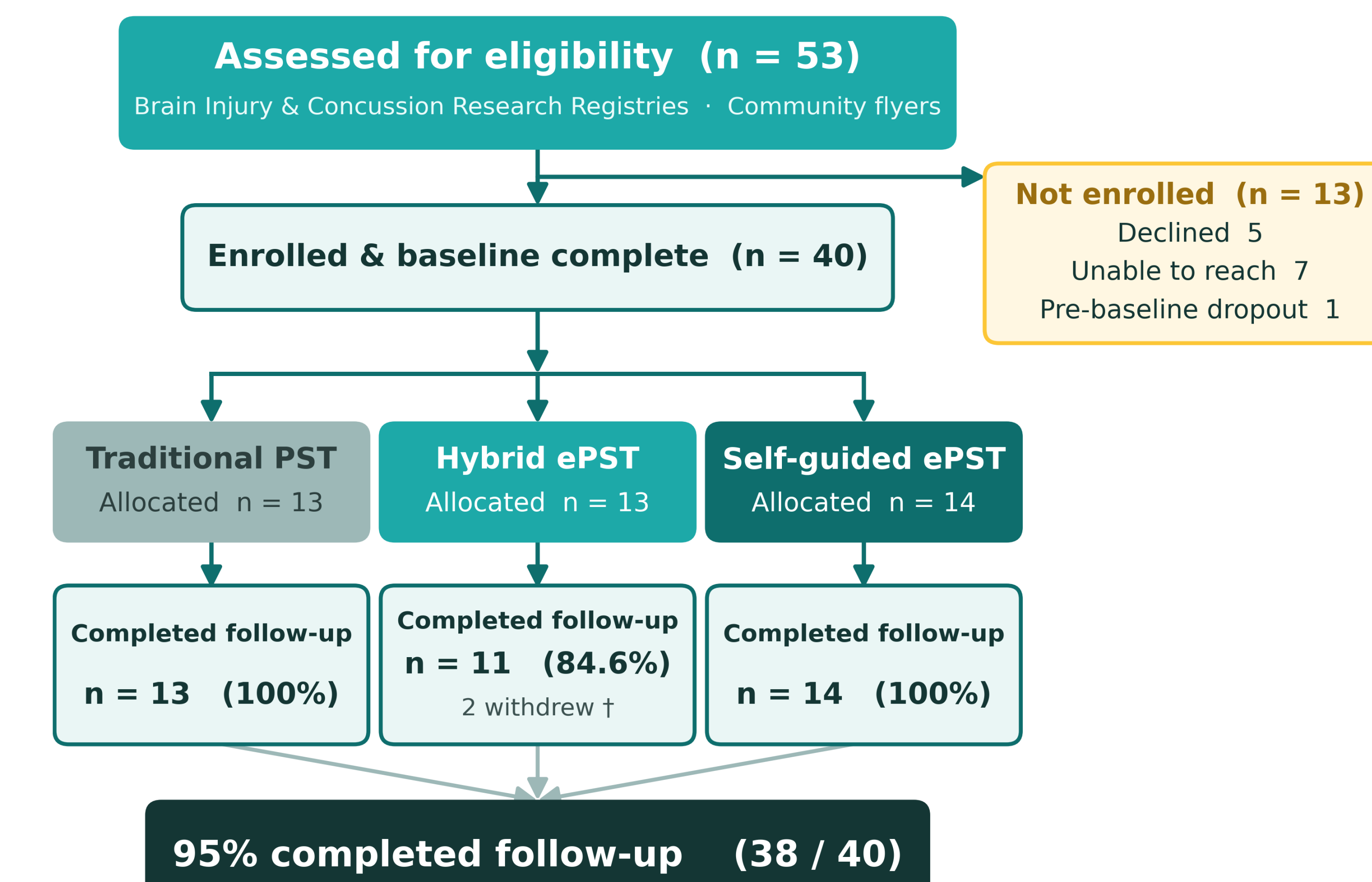
TIRR
MEMORIAL
HERMANN
Rehabilitation & Research

TIRR Memorial Hermann
Brain Health & Rehabilitation Research Center

UNIVERSITY OF
GEORGIA

University of Georgia
Mary Frances Early College of Education

Participant flow



[†]Hybrid withdrawals: medical restriction from devices (n=1); scheduling conflict (n=1)

40 adults · 20 men / 20 women · Mean age 45.1 (range = 19-74) ·
20% military · 60% severe TBI · Mean 14.3 yrs education

Usable & Engaging

4.2–4.3 / 5 ePST module usability (CAUSLT)
3.1 / 4 Digital engagement of ePST Modules (TWEETS)
5.3–5.6 / 7 STEPS app usability (MAUQ)

All lessons completed in under 15 minutes (most under ~10 minutes) achieving microlearning design. Participant engagement in coached sessions was very high (PRPS 5.2–5.5 / 6).

Conclusions

- ❖ All three formats were feasible, acceptable, and highly usable after TBI.
- ❖ Hybrid ePST consistently rated the strongest.
- ❖ ePST is a scalable, low-cost path to evidence-based self-management support.

Future directions

- A powered RCT to test efficacy and compare modalities
- Longer follow-up evaluation
- Automated reminders and a smarter chatbot for self-guided use
- Adaptation for diverse, multilingual groups (Spanish eDSJ in development)