

RCT of an alcohol Approach Bias Modification app among outpatients

AAT
APP

Prof Victoria Manning
VAADA Conference
Feb 2025

I acknowledge the Traditional Custodians of the lands on which we meet, the Wurundjeri people of the Kulin Nation, and pay my respect to Elders past and present.

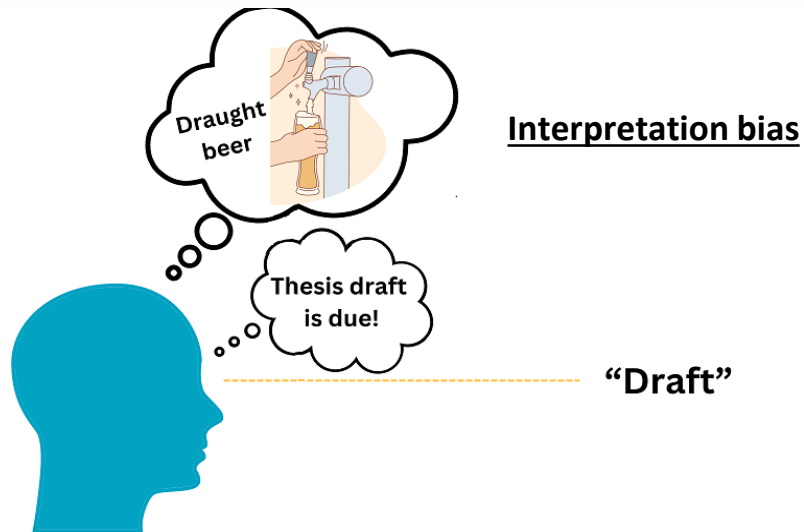
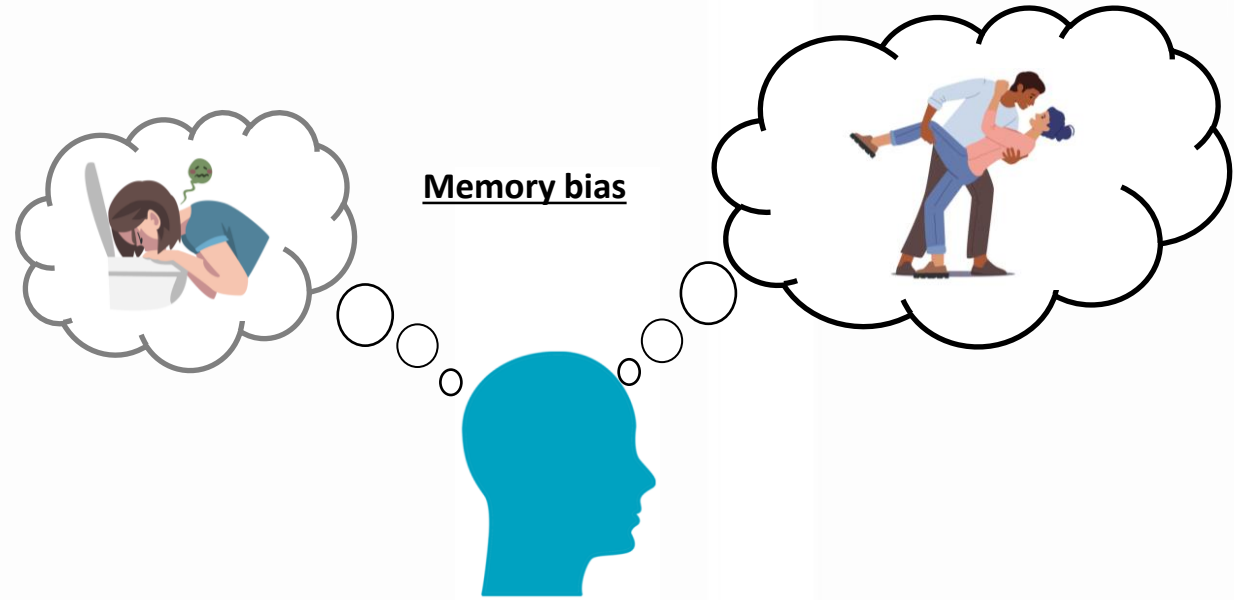
I extend that respect to any Aboriginal and Torres Strait Islander peoples here today or joining us online.

I recognise sovereignty was never ceded.

This always was, always will be Aboriginal land.



Cognitive Biases in Addiction



Alcohol avoidance



Pushing joystick shrinks
image to simulate avoidance



Non-alcohol approach



Pulling joystick enlarges image to
simulate approach



Background

- ABM shown to reduce alcohol relapse rates in residential treatment by 8-13% [Wiers et al 2011, Eberl et al, 2013; Rinck et al, 2018; Manning et. al 2016, Manning et al, 2021, Salemink et al, 2022, Schenkel et al, 2024]
- Few alcohol patients need/receive residential care
- 1 trial of its efficacy with outpatients - no evidence ABM benefits over TAU (Laurens et al., 2023)
- Smartphone versions needed to reach broader pop'n with AUD

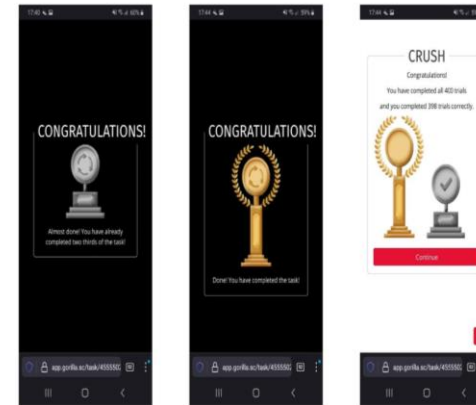
ABM apps so far



“Briendebaas app”
Laurens et al (2020)



“SWiPE app” Manning
et al (2020)*



screenshots of trophies presented during the training.

Peerenboom et al
(2023)



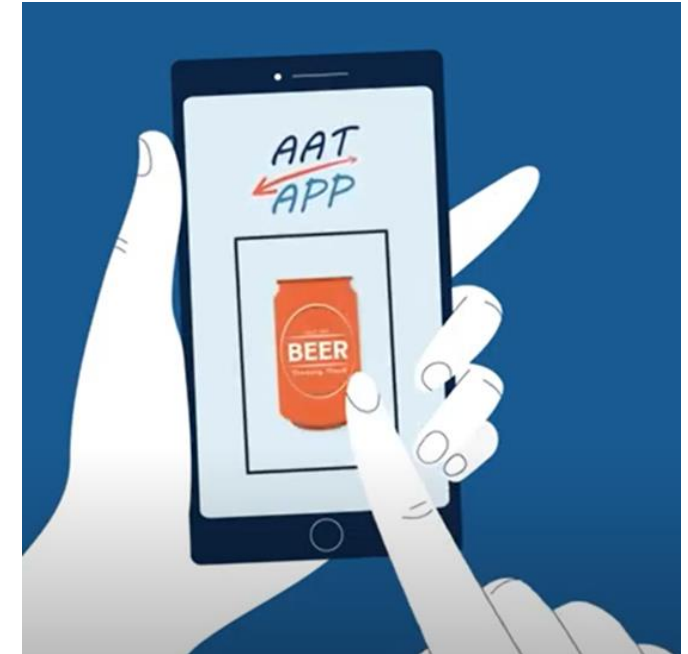
“DrinkLess app”
Oldham et al (2024)

*Manning et. al (2020), JMIR Res Protoc 2020;9(8):e21278 / Manning et al, (2021) JMIR Mhealth Uhealth 2021;9(12):e31353

Trial Aims:

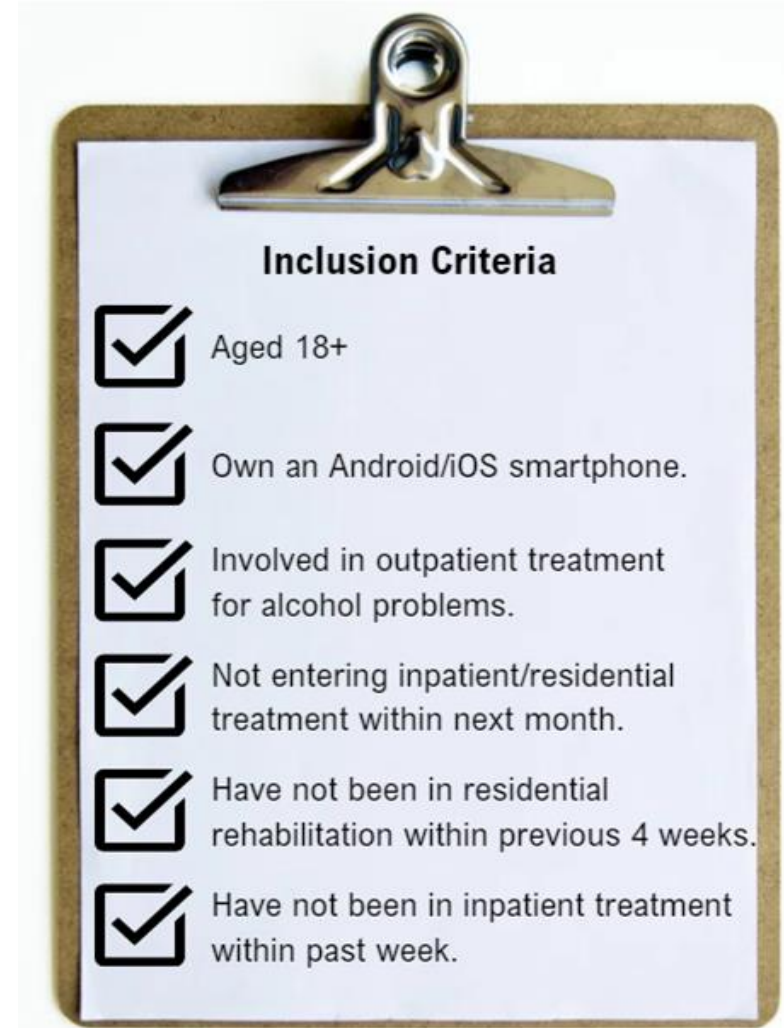
- **Alcohol Avoidance Training (AAT-APP)** – updated version of SWiPE based on qualitative feedback (Bolt et al., 2023)
- Determine efficacy on reduced alcohol use, compared to sham training + TAU (N=300)
- **Primary outcome:** past-week standard drinks.
- **Secondary outcomes:** Past-week drinking days, heavy drinking days, AUDIT, craving, severity of dependence, quality of life

[ClinicalTrials.gov \(NCT05120856\)](https://clinicaltrials.gov/ct2/show/study/NCT05120856)



Method

- Double-blind, RCT
- Clinicians screened and referred eligible participants from 6 outpatient services in Victoria
- Pts completed a screening survey and consented, then sent a link to download the app
- Pts assigned by app to 4 weeks of ABM/Sham Training
- Follow-up completed: post-training, 1M & 3M
- Qualitative interviews also conducted with participants and clinicians (data analysis underway)



AAT-APP



Select alcohol images and positive images

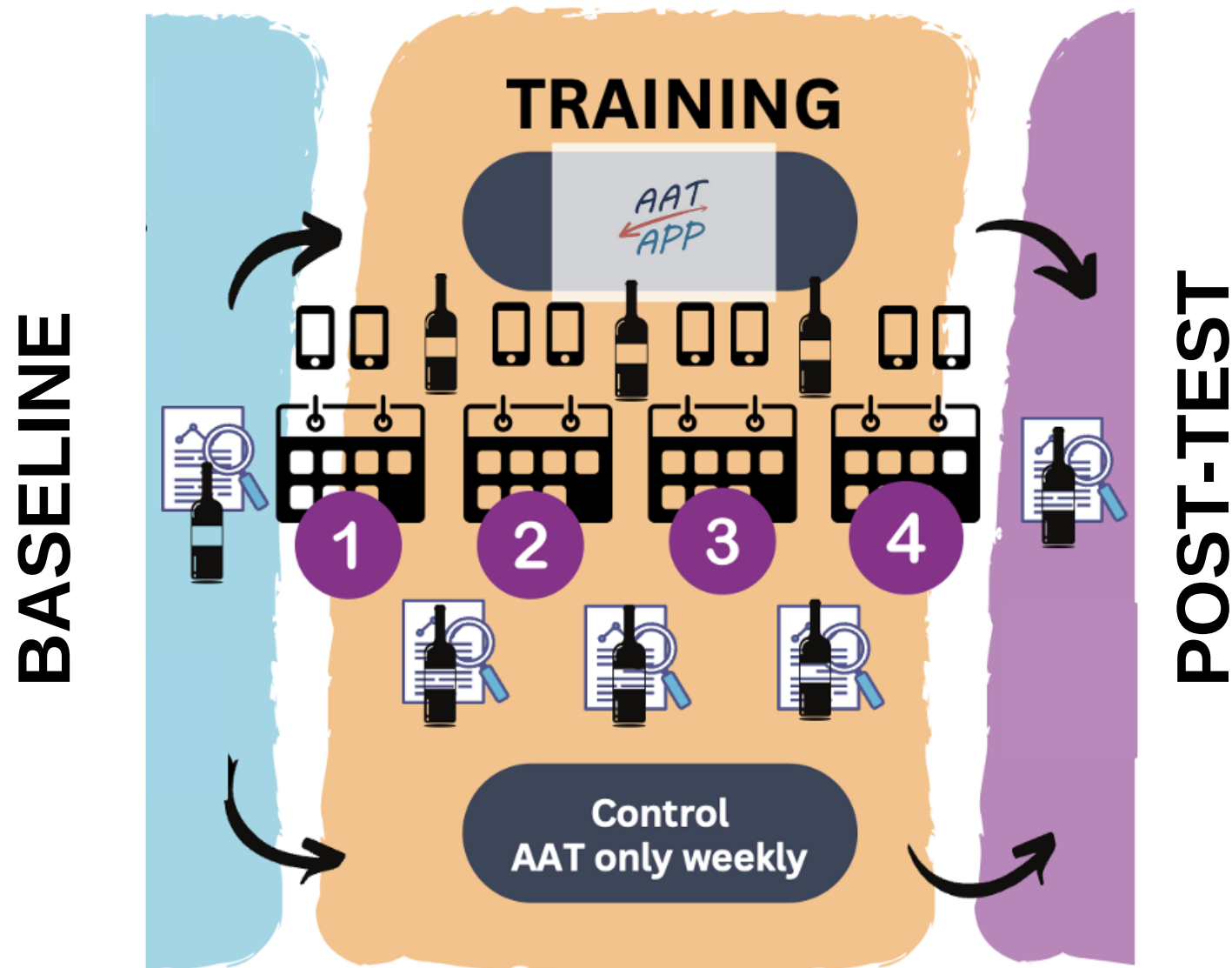


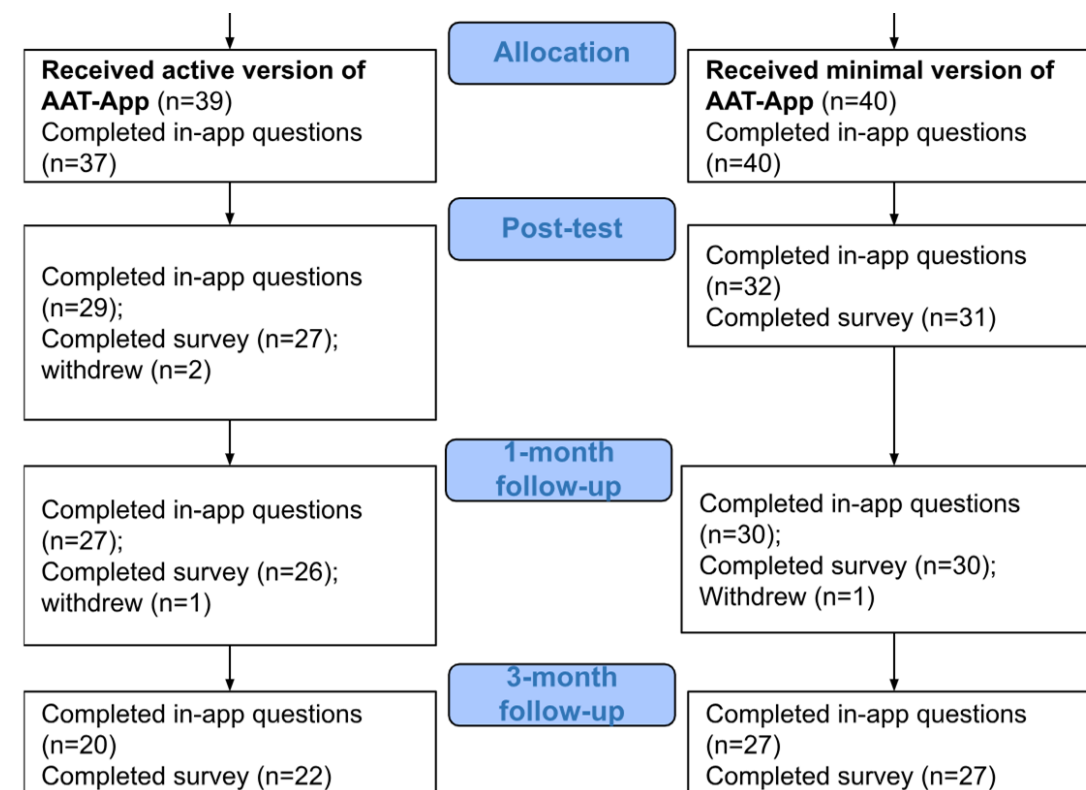
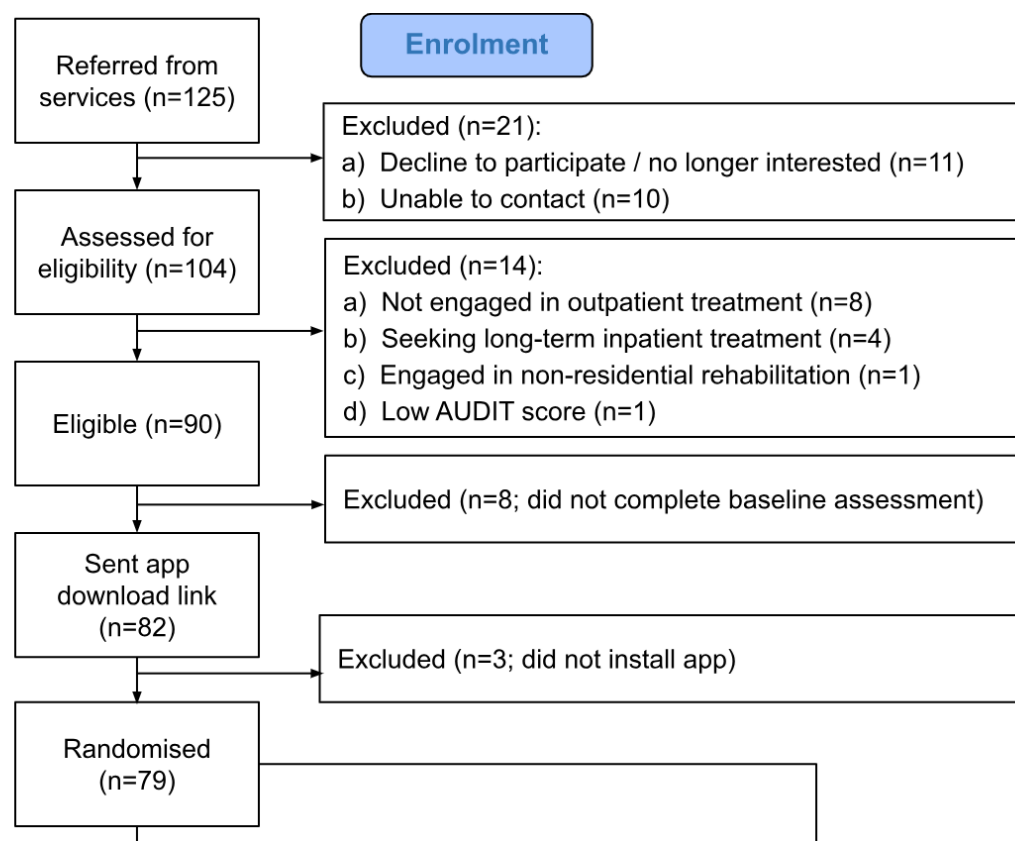
Swipe away alcohol images



Swipe towards positive images

Interventions





Follow-up rates

75% post-test, 72% 1-Month, 67% 3-Month

Demographics

Demographic characteristics



Gender

43% female
57% male



Age

Average age
of **46.6** years



Device

65% iOS
35% Android



Employment

68% Employed
13% Unemployed
18.9% Other



Highest level of education

42% Apprenticeship, TAFE, diploma,
professional qualification
32% Bachelor's degree
11% Year 10 or Year 11
7.6% Postgraduate degree
3.8% Year 12
3.8% Less than Year 10



Race

92% White/European
2.6% East/South East Asian
2.6% Latino/Latina
1.3% African
1.3% South Asian

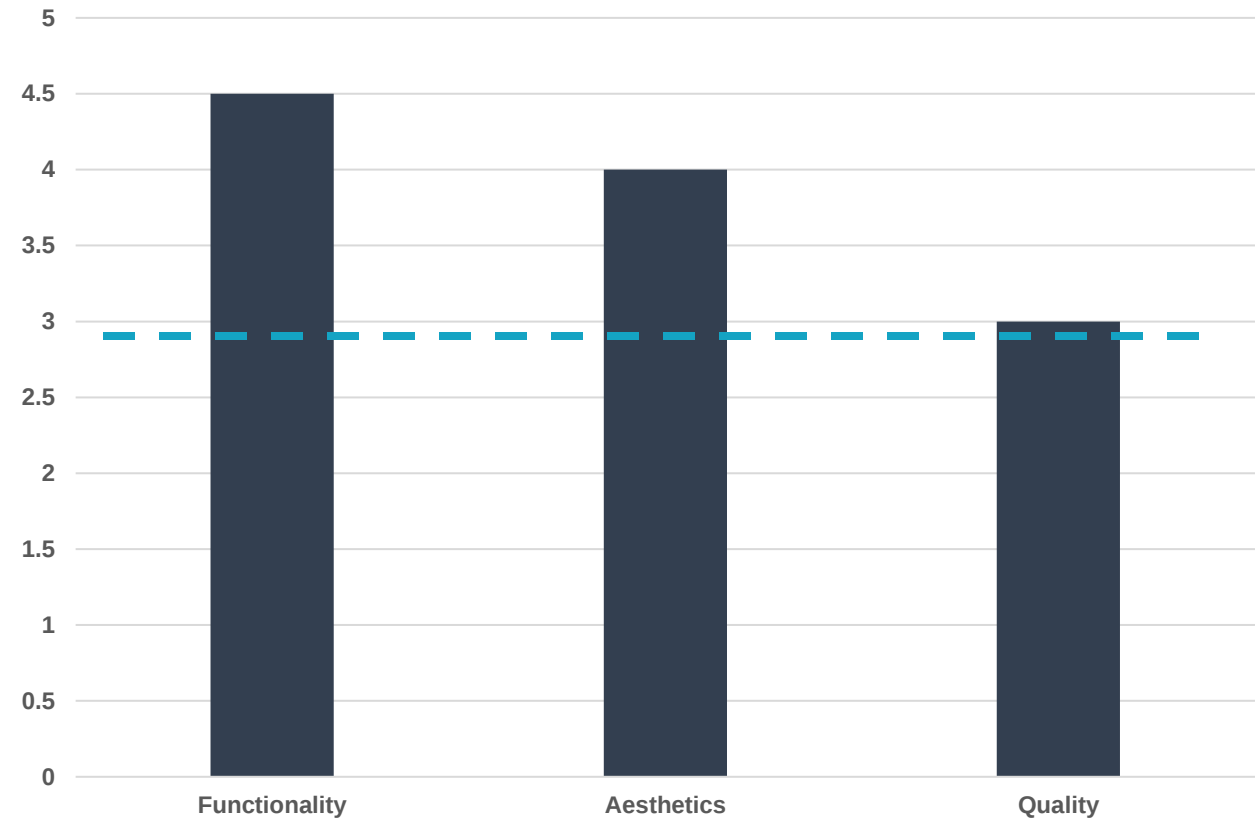
Clinical Characteristics

Clinical characteristics at baseline				
Past-week standard drinks Average of 36.4 standard drinks consumed in the past week	Past-week drinking days Average of 3.3 past-week drinking days	Past-month drinking days Average of 13 past-month drinking days	 Treatment goal 44% to reduce consumption 56% to stop drinking completely	
Past-week heavy drinking days Average of 2.7 past-week heavy drinking days	AUDIT score Mean <i>AUDIT</i> score of 26.6 and mean <i>AUDIT-C</i> score of 10.2	Abstinence 28% of sample abstinent in the past-week and 17% abstinent in past-month	Dependence & craving Mean <i>SDS</i> score of 9.1 and mean <i>CEQ-F</i> score of 4.3	Health & wellbeing Average scores <i>Psychological</i> : 4.6/10 <i>Physical health</i> : 4.9/10 <i>Quality of life</i> : 5.3/10

Results: Acceptability

- Engagement: Mean 8.1 (range 1-36) sessions, (median=7)
- uMARS: adequate is score of 3+
- The average session took 3.9 minutes (SD = 2.0).

Mean Ratings on uMARs subscales

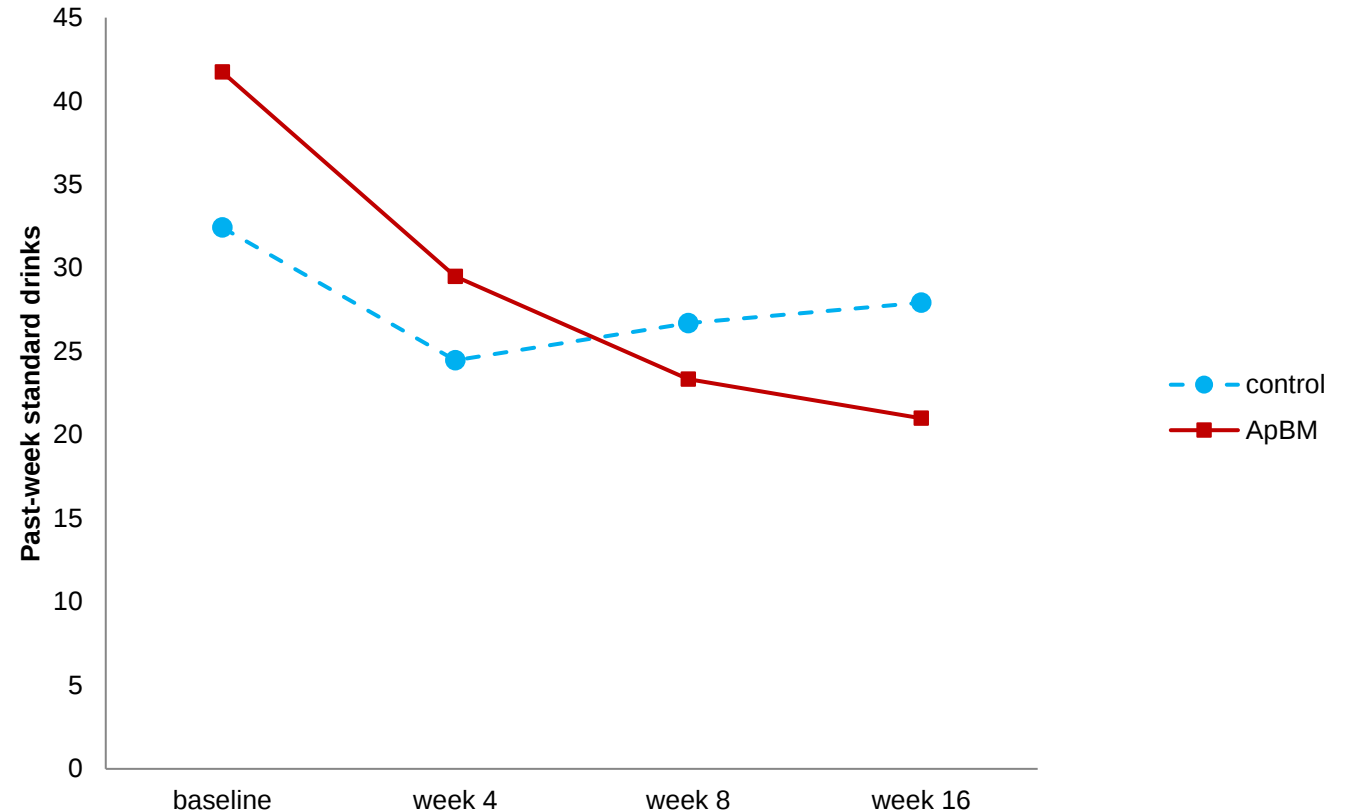


Results: Primary outcome

Changes in Standard drinks

Week 4 reduction of **11.4 SD** (ABM),
8.9 SD (Con) (Group X Time
interaction non-significant $p=.76$)

Week 16 (Group X Time interaction
significant, $p<.05$) Mean reduction
20.7 SD (ABM) versus **4.5 SD** (Con)



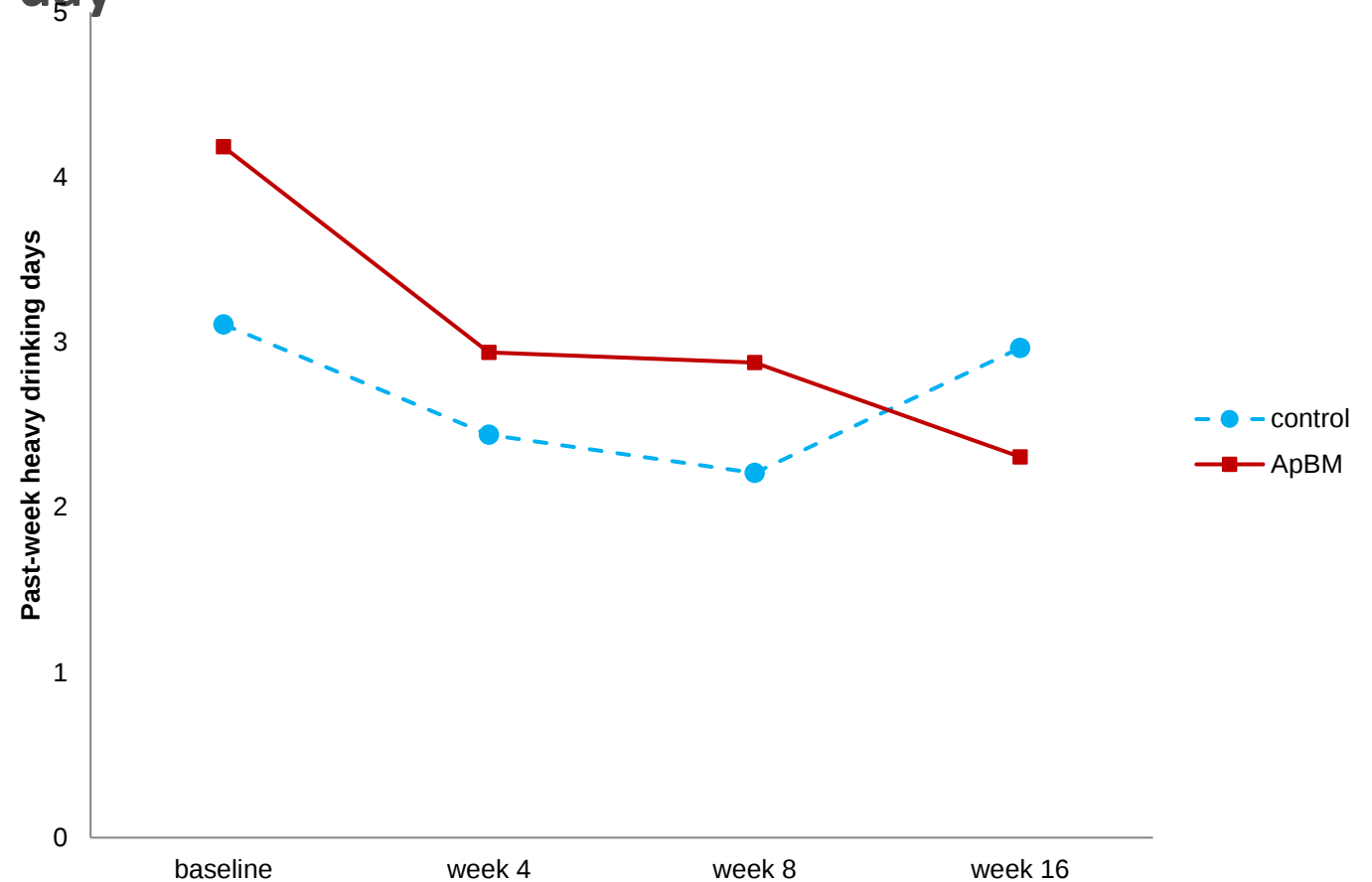
*Garfield et al (under review)

Secondary outcomes

Heavy Drinking Days (HDD) >5 SD on a day

Week 4 main effect of time ($p < .05$)
reduction of **1.3*** (ABM), **0.7** (Con)
but no Group X Time interaction
($p = .67$)

Week 16 main effect of time ($p < .05$)
reduction of **1.9**** (ABM), **0.1** (Con)
(Group X Time interaction, $p < .05$)

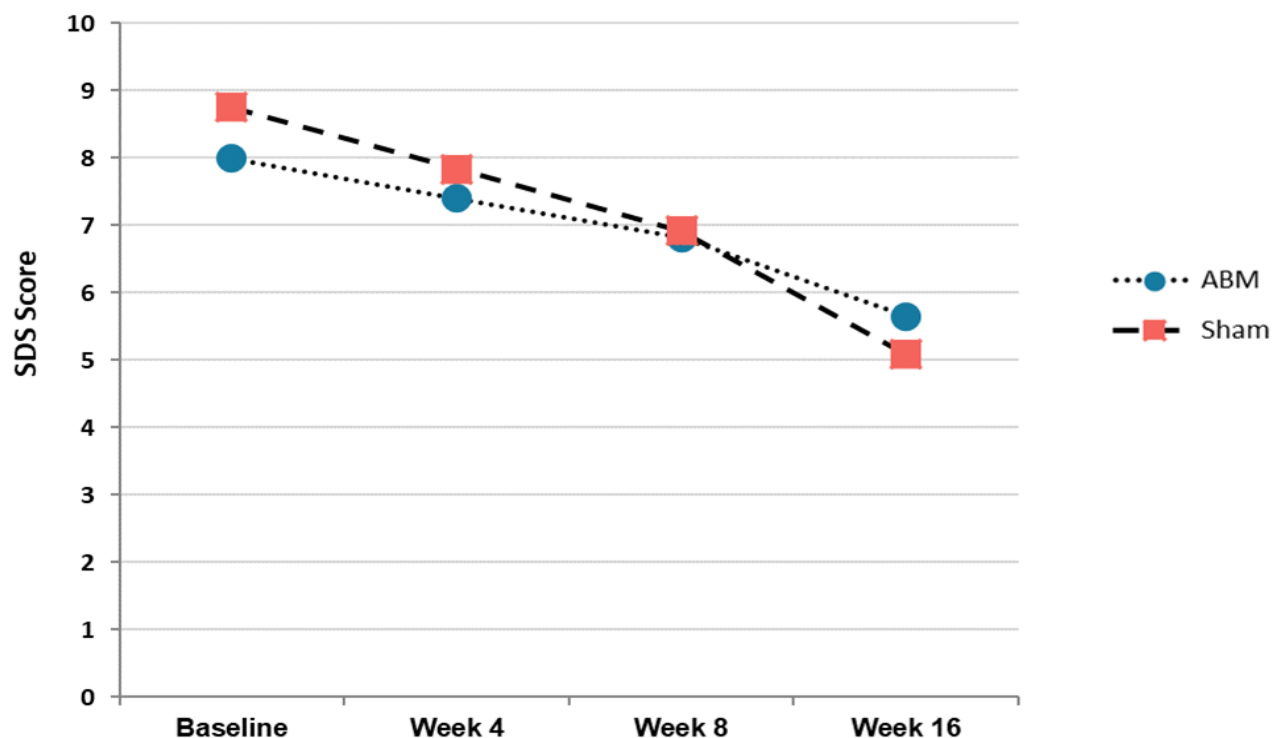


*within group comparison $p > .05$

**within group comparison $p > .01$

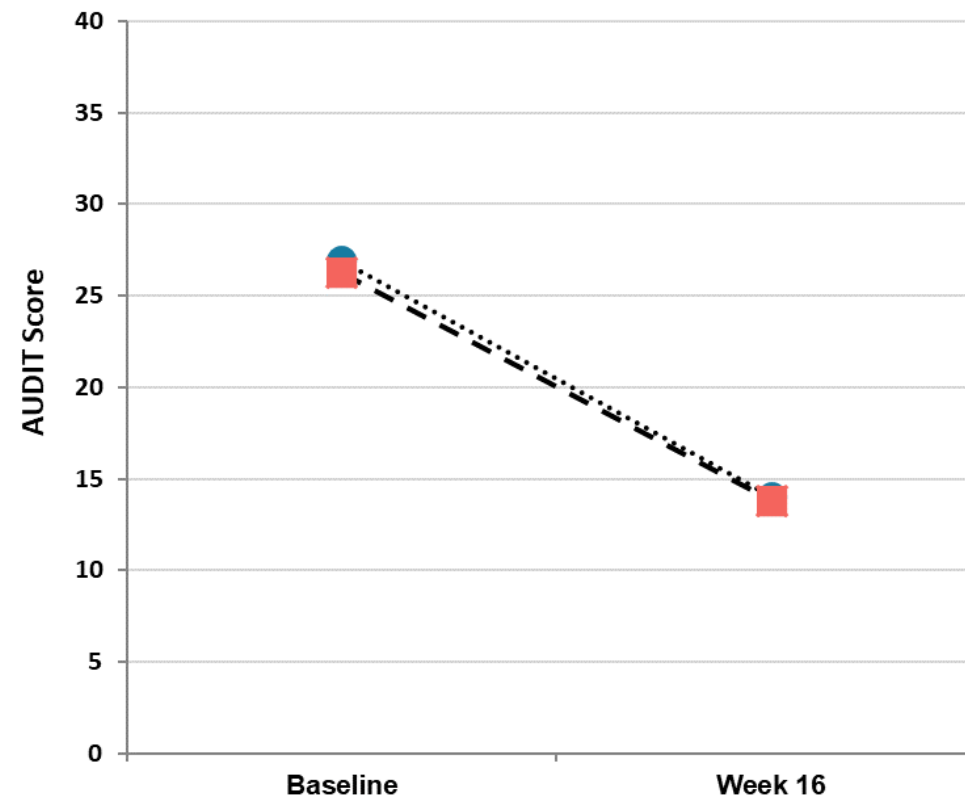
Secondary outcomes

Change in severity of dependence (SDS) scores



Significantly reduced over time ($p < .001$) but no group x time interaction ($p = .207$)

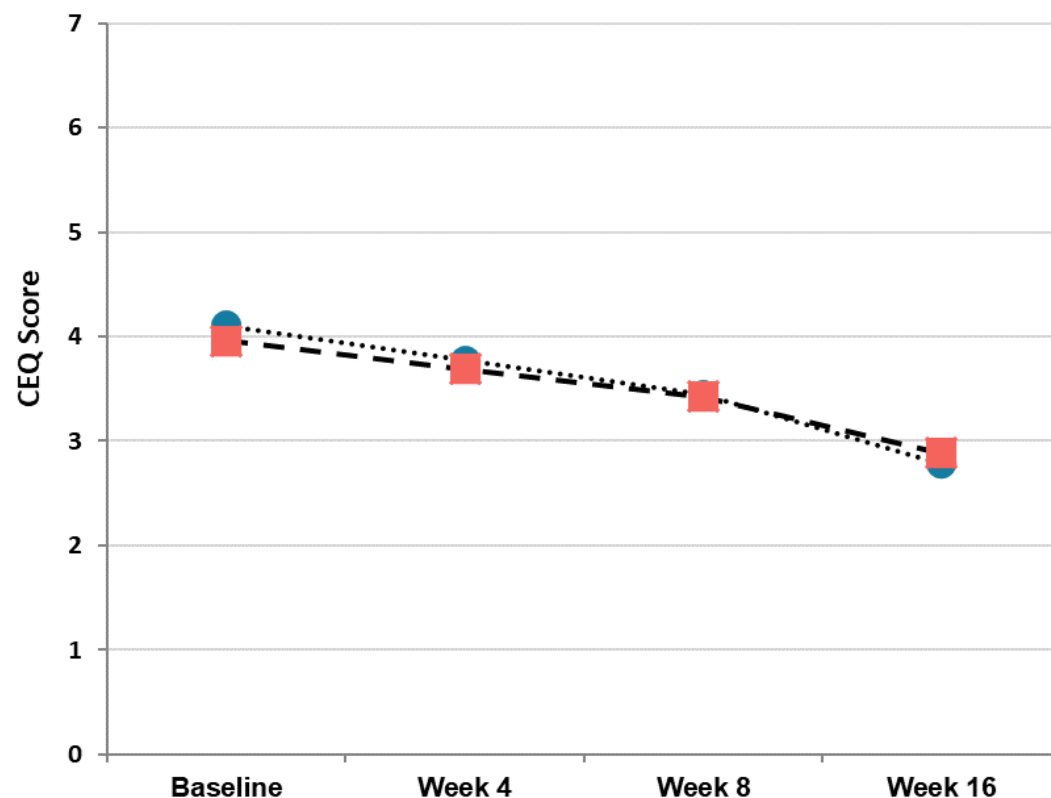
Change in AUDIT scores



Significantly reduced over time ($p < .001$), but no group x time interaction ($p = .876$)

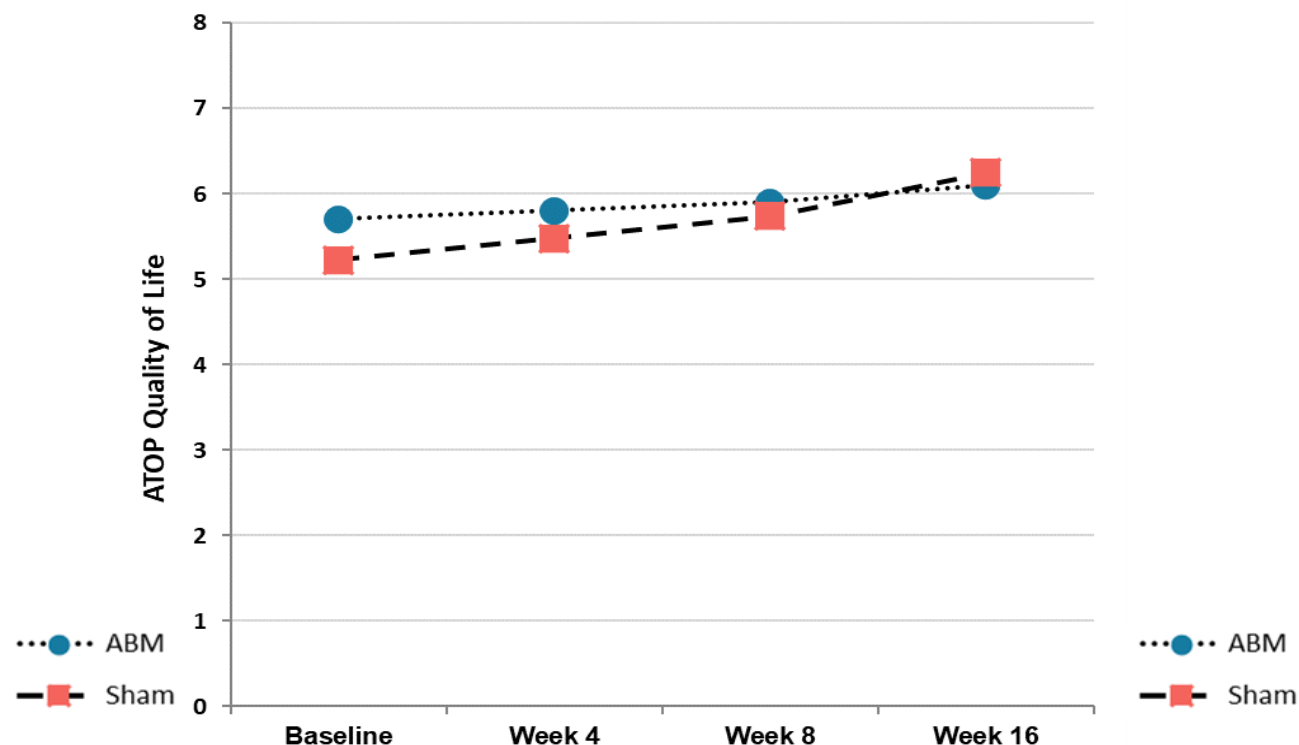
Secondary outcomes

Change in Craving scores



CEQ scores significantly reduced over time ($p=.003$), but no group x time interaction ($p=.633$)

Change in quality of life (ATOP) scores



Significantly improved over time ($p=.005$), but no group x time interaction ($p=.247$)

Blinding

No indication of any blinding failure

	Believed they were in <u>ABM</u> group	Believed they were in <u>Sham</u> group
Actually in <u>Sham</u> group	16 (57%)	12 (43%)
Actually in <u>ABM</u> group	9 (39%)	14 (61%)

Limitations

- Sample was grossly underpowered (low referrals, Telehealth during COVID, app dev delays & bugs)
- Reliant on clinicians (time-poor)
- Short-term outcomes (up to 3-months)
- Self-report data

Conclusion

- ABM app may help outpatients reduced consumption
- Delayed effects observed with other CBM studies (depression)
(Browning et al, 2012)
- ABM doesn't reduce craving, alcohol problems severity, etc
(reduced by treatment itself)
- App engagement and acceptability was good
- ABM app could be an effective adjunctive treatment for outpatients

Acknowledgements

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Services: Staff and Clients at the participating services



App Dev Team: ANT Development Studios and Monash University eSolutions

Researchers: Joshua Garfield, Samuel Liu, Hugh Piercy, Bosco Rowland, Danielle Whelan



Thanks for listening!



Read more at

doi: <https://doi.org/10.1101/2024.10.09.24315059>

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'brain training'
app to reduce
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