



Supporting women who have served in the UK Armed Forces with a smartphone app to reduce alcohol consumption

Randomized Controlled Trial

Dr Dan Leightley
King's College London

Get the slides





Faculty/presenter disclosure

DL is a member of the UK Armed Forces Army Reserve. This work has been undertaken as part of my civilian employment.

Co-authors

A Simms is a full-time member of the UK Armed Forces.

K King is a full-time member of the UK Armed Forces.

N Fear is part funded by a grant from the UK Ministry of Defence and is a trustee of a charity supporting the health and wellbeing of service personnel, veterans and their families.

E Carr is part funded by the National Institute for Health and Care Research Biomedical Research Centre at South London and Maudsley NHS Foundation Trust.

D Murphy is a trustee of the Forces in Mind Trust.





Disclosure of financial support

This project has received financial support from the Office for Veterans Affairs (UK; now Ministry of Defence), UKRI Medical Research Council and the Forces in Mind Trust in the form of research grants.

This project has received in-kind support from Combat Stress in the form of clinical oversight.





Disclosure of financial support

The UK Ministry of Defence, Forces in Mind Trust and UKRI Medical Research Council had no input in the analysis or interpretation of results.

All results have been verified independently, and work is currently under peer review.





Learning objectives

At the conclusion of this activity, participants will be able to apply evidence-based strategies from the DrinksRation intervention to support women who have served in reducing hazardous alcohol use, by integrating digital health tools into clinical or support settings.



Alcohol use in women who served

- Women who have served drink more than women in the general population (Rhead *et al*; 2020);
- Nearly half report hazardous or harmful drinking (49%; Palmer *et al*; 2021);
- Alcohol is often used as a coping strategy for PTSD, anxiety, and depression;
- Hazardous drinking is linked to poor health and reduced wellbeing;
- Limited tailored support available - digital tools can help close this gap.





Why digital health matters to the veteran community?

Healthy veterans = stronger futures; digital tools help support them.

- Helps overcome barriers to care such as stigma, geography, and waiting times;
- Offers private, flexible support that veterans can access anytime, anywhere;
- Can be tailored to the unique needs of veterans, including gender-specific and service-related experiences;
- Supports early intervention before problems develop;
- Builds scalable solutions that reduce pressure on traditional health services.

DrinksRation

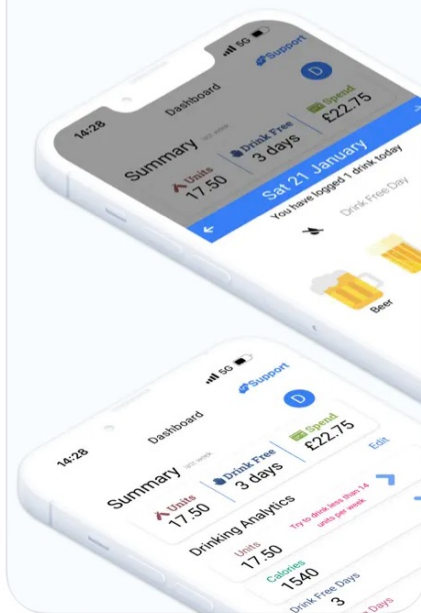


Azure
Machine Learning Services



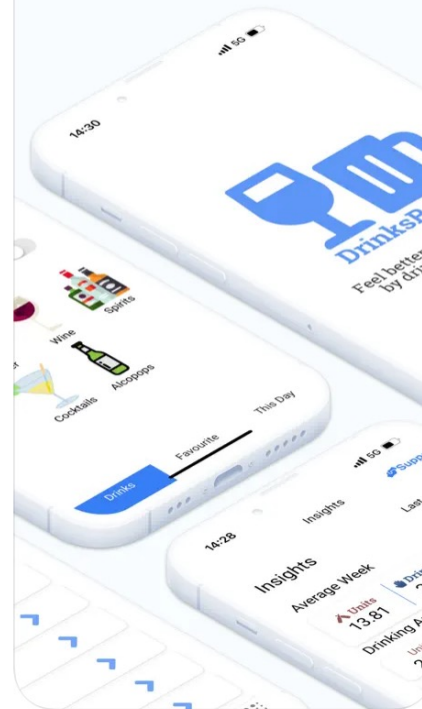
Save Money

by drinking less with
DrinksRation.



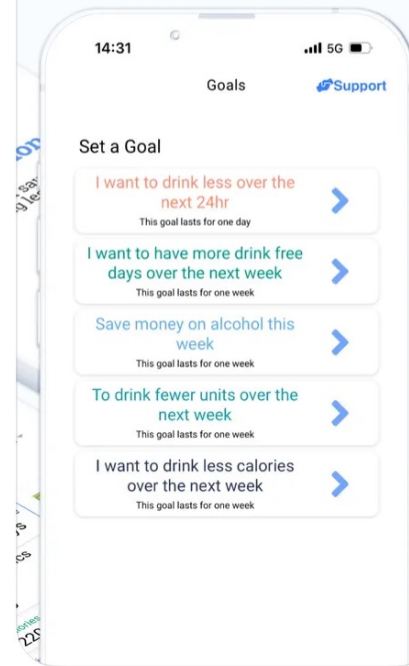
Record

any time.



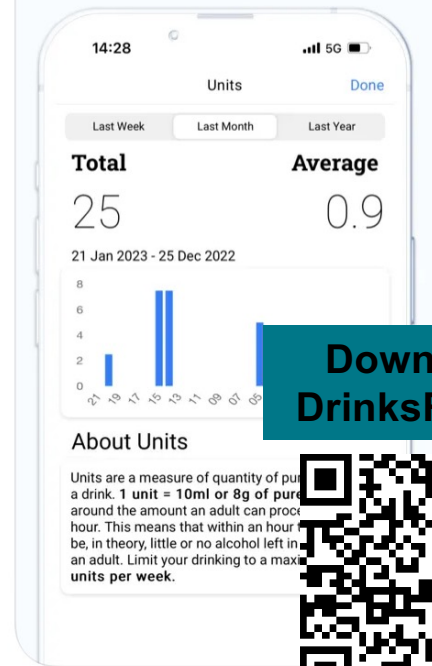
Set Goals

to help you cut down.



Insights

about your drinking.

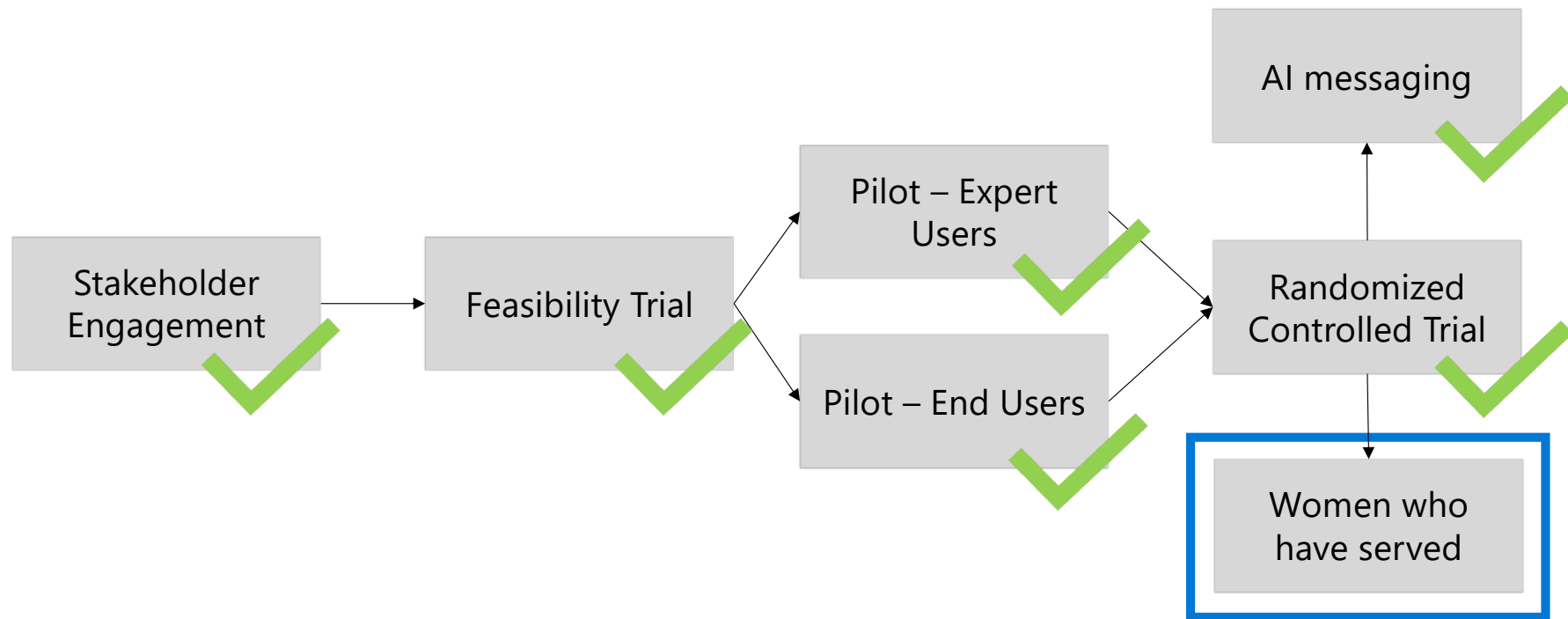


Download
DrinksRation



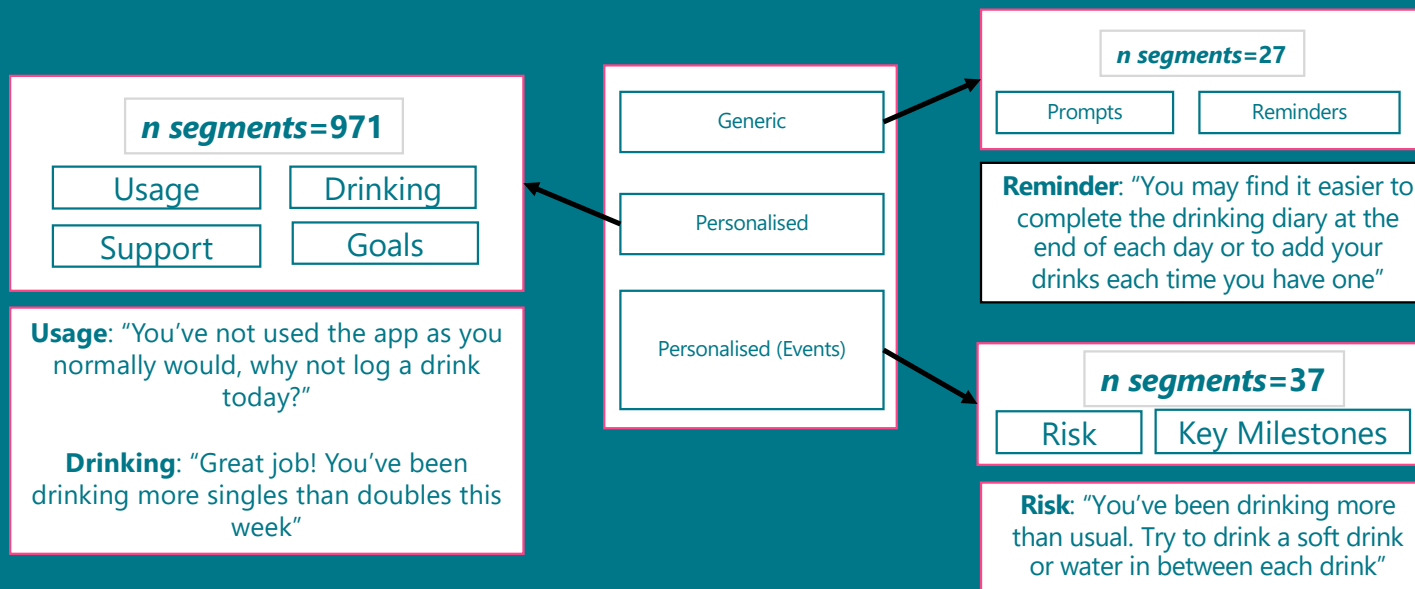


The story so far...





Personalising the message

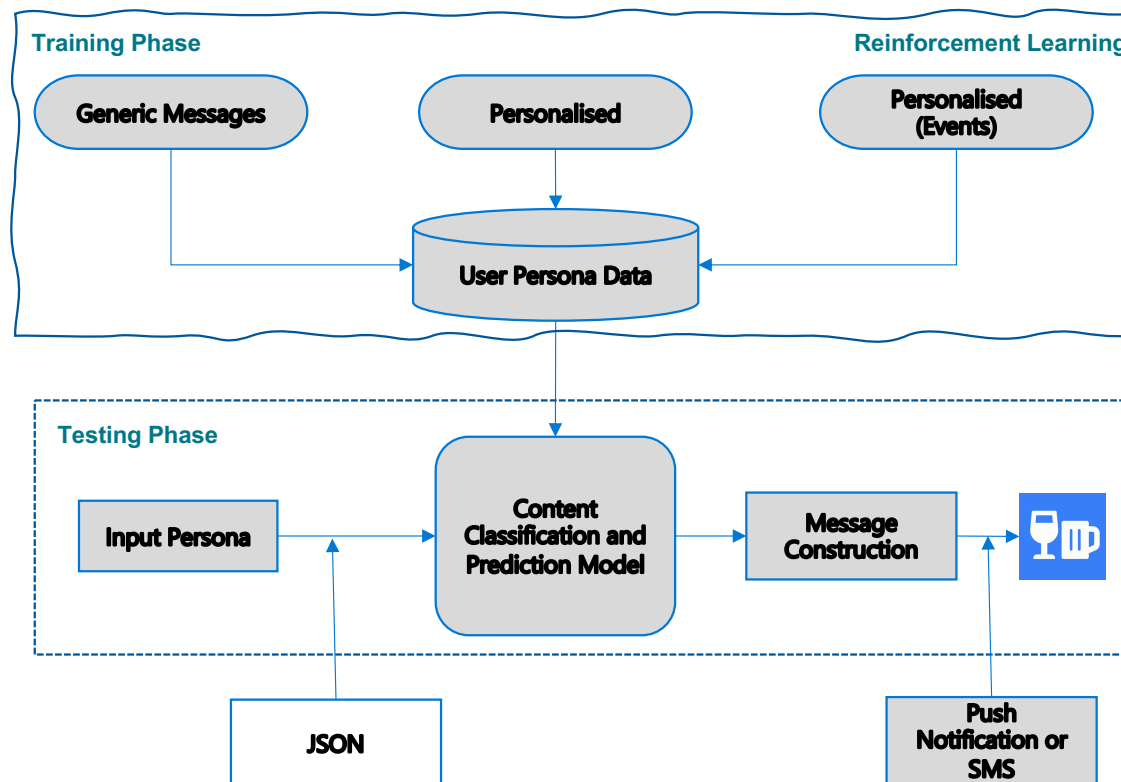


[Read more:](#) A Qualitative Evaluation of the Acceptability of a Tailored Smartphone Alcohol Intervention for a Military Population: Information About Drinking for Ex-Serving Personnel (InDEx) App





Machine learning



[Read more:](#) Reducing alcohol consumption in veterans: feasibility of using personalized AI messaging





Randomised Controlled Trial

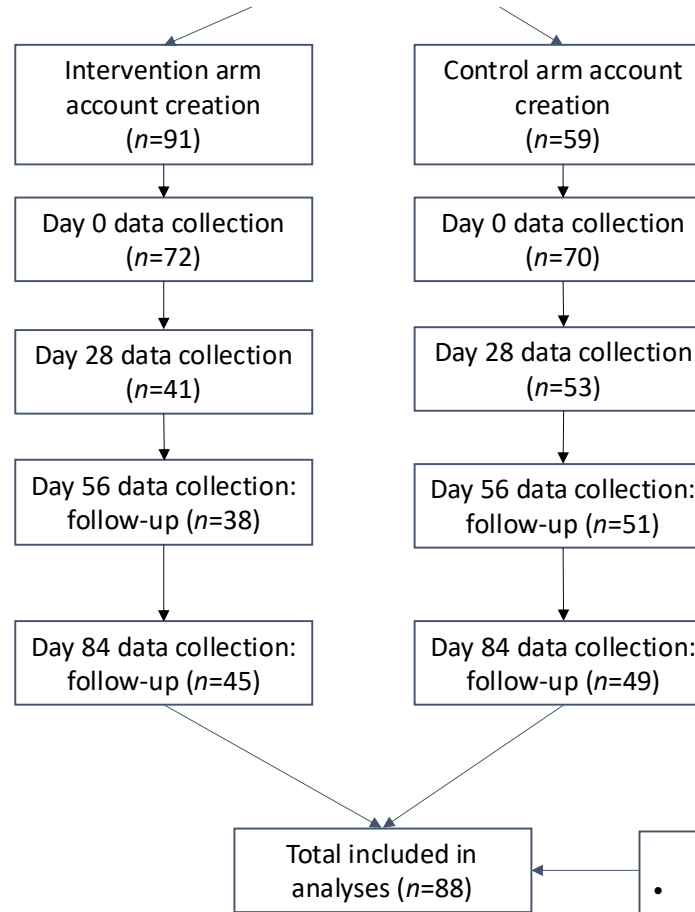
- Aim: To test whether the DrinksRation app reduces alcohol consumption among women veterans compared to standard NHS guidance.
- Intervention: DrinksRation: a smartphone app delivering tailored, interactive support and personalised messaging.
- Control: BeAlcoholSmart: a web app with NHS alcohol advice and unit calculator.

Hypothesis: Participants using DrinksRation will show greater reductions in alcohol consumption and hazardous drinking than those in the control group. (Power calculation based on 3 units)



Participants

- Excluded ($n=987$)
- Self-reported male ($n=110$)
 - Never served ($n=35$)
 - Less than 14 units ($n=427$)
 - No valid email ($n=57$)
 - Duplicate ($n=38$)
 - No consent ($n=7$)
 - Incomplete response ($n=313$)



**Warning
BOTS**

$n=108$
line ($n=5$)
hol ($n=3$)



Results – Alcohol consumption

Outcome	Overall n=88	BAS n=37	DrinksRatio n n=51	Adjusted mean difference* (95% CI)	p- value
	Mean (SD)	Mean (SD)	Mean (SD)		
Weekly alcohol units					
Baseline	27.2 (16.1)	28.3 (17.4)	26.5 (15.2)	11.6 (3.6 to 19.7)	0.005
Follow-up	15.9 (17.5)	23.2 (23.9)	11.1 (9.3)		
AUDIT score					
Baseline	14.5 (6.9)	15.1 (7.4)	14.0 (6.6)	3.9 (1.0 to 6.9)	0.010
Follow-up	8.7 (6.8)	10.7 (7.3)	7.6 (6.2)		





Results – Engagement

Interactions	BAS median (IQR)	DrinksRation median (IQR)
Engagement measures		
Initializations	1 (1 to 3)	13 (7 to 39)
Session count	2 (1 to 3)	132.5 (54 to 284)
Session duration	33.86 (18.87 to 55.50)	17.45 (10.44 to 47.95)
App-recorded interactions		
Drinking days	-	11 (4 to 22)
Drink-free days	-	19 (5 to 51)
Units consumed per drinking day	-	5.36 (4.44 to 7.11)
Notifications		
Push notifications	-	52 (33 to 67)
Email	7 (5 to 9)	-
Weeks active	1 (1 to 2)	11 (8 to 15)



Conclusions

- DrinksRation significantly reduced alcohol consumption and hazardous drinking in women who have served.
- The app was well-used, with high engagement and positive usability ratings.
- Findings highlight the value of a tailored digital intervention for this group.
- Some challenges included participant attrition and detecting fraudulent/bot entries, but robust checks helped protect data quality.
- Overall, the RCT demonstrated strong potential for scaling gender-sensitive digital tools.





The team

Research Team.

Dr Daniel Leightley – King's College London

Grace Williamson – King's College London

Rhea Varghese – King's College London

Dr Ewan Carr – King's College London

Professor Nicola T. Fear CBE – King's College London

Dr Laura Goodwin – Lancaster University

Professor Dominic Murphy – Combat Stress and King's College London

Professor Simon Dymond – Swansea University

Lt Col Amos Simms – UK Armed Forces

Surg Cdr Kate King – UK Armed Forces

Get the slides





Questions & answers

daniel.leightley@kcl.ac.uk

Get the slides





References

1. Palmer, L. et al. (2021). Trajectories of alcohol misuse among the UK Armed Forces over a 12-year period. *Addiction*. doi:10.1111/add.15592.
2. Rhead, R. et al. (2020). Mental health disorders and alcohol misuse among UK military veterans and the general population: a comparison study. *Psychological Medicine*, 1–11. doi:10.1017/S0033291720001944.

