

Study Summary

DrinksRation - A digital therapeutic to reduce hazardous drinking in women who have served in the UK Armed Forces

Purpose of the study

Hazardous drinking is common among women who have served in the UK Armed Forces, limited existing evidence suggests that female veterans' alcohol use is increasing and that they are significantly more likely to report symptoms of hazardous drinking than female civilians¹. Existing digital tools to help veterans manage alcohol consumption have been designed with a male veteran's in mind, leaving a gap for women who have served. The Office for Veterans' Affairs (OVA) commissioned King's College London, alongside Combat Stress and Lancaster University, to generating evidence for a tailored version of the app.

The primary purpose of the randomised controlled trial (RCT) was to determine if the DrinksRation app, adapted with content tailored for women and behaviour-change techniques, produced greater reductions in weekly alcohol consumption over 84 days compared to a web site which presented standard NHS advice BeAlcoholSmart (www.bealcoholsmart.com). By testing an automated intervention against a digital control, the study aimed to provide efficacy that could inform future decisions on alcohol treatments for women.

A secondary aim was to characterise the use and safety of DrinksRation for this community. Specifically, the RCT assessed changes in Alcohol Use Disorder Identification Test (AUDIT) scores, in-app engagement metrics and perceived usability, while also reporting adverse events and technical issues.

The study included a companion systematic review of digital substance use interventions for women in frontline public-service roles. The review sought to map existing evidence, highlight gender-specific research gaps and position the DrinksRation findings within the wider landscape of digital health solutions. Together, the RCT and the review were designed to give the OVA a comprehensive basis for policy, commissioning, and future research investment.

Background and rationale

Around 1.8 million people in England and Wales are veterans, with roughly 11% identifying as female². Within this group, alcohol misuse is elevated, with nearly half (49%) of surveyed women veterans screening at hazardous or harmful levels of alcohol use, far higher than women in the general population³.

Hazardous drinking rarely occurs in isolation. Women who have served face higher rates of PTSD, anxiety, and depression compared with women in the general population, and alcohol is frequently used to self-medicate these conditions^{4,5}. Combined with barriers to help-seeking, stigma, geographic dispersion, and services perceived as "for men", the result is an underserved population whose drinking contributes impacts quality of life^{4,6}.

Traditional brief interventions delivered face-to-face are unlikely to close this treatment gap. DrinksRation was adapted as the UK's first digital therapeutic specifically for women who have served⁷, embedding behaviour-change techniques, wearable integration, and gender-tailored push messaging to deliver confidential, always-on support. This RCT tested whether this bespoke, fully automated app outperforms generic NHS advice, thereby generating the high-quality evidence required for national policy and commissioning decisions.

What we did at a glance

- Designed a participant-blinded RCT comparing the DrinksRation app with a digital control (BeAlcoholSmart). Randomisation and data capture was fully automated.
- Between January and July 2024, recruited 88 women who had served and who drank ≥ 15 UK units per week. Eligibility screening, consent, and baseline assessment were completed online.
- Over 12 weeks (84 days), participants self-reported drinking at baseline, 28, 56 and 84 days. Both apps simultaneously logged engagement analytics and delivered push or email prompts as required.
- The primary outcome was change in weekly alcohol units (7-day Timeline-Follow-Back) between baseline and day 84.
- Secondary outcomes were change in AUDIT score, app usability (at day 28), granular engagement metrics and adverse-event surveillance.
- Our statistical approach was to use linear mixed effects models (intention-to-treat) with baseline adjustment.
- In our review, we conducted a PROSPERO-registered systematic review of digital substance-use interventions for women in frontline public-service roles, screening 14,831 records to include 13 studies across eight interventions.

Our key findings.

The RCT was designed to establish the efficacy of the gender-tailored DrinksRation app for reducing hazardous drinking among women who have served, compared to a digital control condition (BeAlcoholSmart). A total of 88 participants were followed for 12 weeks. The headline results, summarised below, show clear and clinically meaningful benefits of the intervention, supported by robust engagement and user acceptability.

- DrinksRation users reduced their weekly intake by 11.6 UK units (≈ 93 g ethanol) more than controls at day 84 (95% CI: -19.7 to -3.6; $p = 0.005$; Cohen's $d = 0.67$).
- Participants' AUDIT scores reduced by 3.9 points more than controls (95% CI: -6.9 to -1.0; $p = 0.010$; $d = 0.58$).
- This means that, over twelve weeks, people's risky drinking went down by about 42% compared to the starting point.
- Median 132.5 in-app sessions (IQR = 54 to 284) indicate sustained interaction over the 84-day exposure window.
- Usability was high with 6.2 out of 7 for DrinksRation versus 5.2 for BeAlcoholSmart, reflecting strong perceived usefulness and ease of navigation.
- 84% of the intervention arm completed the day 84 survey, demonstrating feasibility for real-world deployment.
- No serious adverse events were reported in either arm. Minor alcohol-related incidents were infrequent and occurred at comparable rates, suggesting that the app does not introduce additional risks.

Taken together, these findings position DrinksRation as an evidence-based, scalable digital therapeutic that can support reductions in hazardous drinking among women who have served while maintaining high engagement and minimal safety concerns. The observed reductions translate into tangible health gains and likely cost savings for the NHS.

Wider evidence from the systematic review

The systematic review searched four bibliographic databases from 2007 to July 2024. It screened 14,831 records, resulting in the inclusion of 13 peer-reviewed studies describing eight digital

interventions which could be used by women for alcohol, tobacco or combined substance use in frontline public-service roles (military, police, fire and healthcare).

Most interventions delivered brief self-monitoring and feedback via mobile apps or web portals; only three studies were randomised, and just one focused exclusively on veterans. Overall methodological quality was mixed: two trials were at low risk of bias, six studies were rated moderate, and the remainder high, largely because of small samples and short follow-up windows.

Pooled estimates showed consistent, but modest, reductions in weekly alcohol units (-4.2 units) and cigarettes per day (-1.8) relative to minimal-contact controls. However, heterogeneity was substantial and long-term maintenance beyond three months was rarely assessed. Almost all programmes were originally designed for mixed-gender audiences; gender-specific tailoring was either absent or superficial, and no study incorporated behaviour-change techniques mapped to the lived experience of women veterans.

These gaps underscore the added value of the present DrinksRation RCT, which is not only the largest controlled evaluation in this community but also the first to embed gender-tailored content, comprehensive engagement analytics and a digital comparator, thereby lifting the evidence base to a level that can inform national policy and commissioning.

Implications for the Office for Veterans' Affairs

Benefit	Detail
Health impact	Statistically and clinically significant, rapid reduction in hazardous drinking and alcohol-related harm.
Cost-effectiveness	Fully automated tool reduces clinician time; potential NHS savings on alcohol-related consultations and admissions.
Equity & reach	Addresses a historically under-served cohort (11 % of veterans); overcomes geography and stigma barriers.
Readiness for scale	App already hosted on Apple/Google stores; backend supports push messaging and data dashboards.

Recommendations and next steps

- Deploy DrinksRation through OVA-supported digital touchpoints ([GOV UK Veterans Support](#), [OVA website](#), [Armed Forces Covenant Trust](#)). Track real-world uptake, engagement and drinking outcomes at 6 and 12 months to validate effectiveness outside the trial setting.
- Integrate single-sign-on or referral links within Op COURAGE, Alcohol Care Teams and primary-care EMIS templates so clinicians can prescribe the app as a first-line, self-guided option. This creates a stepped-care model in which digital support precedes or complements face-to-face treatment, optimising clinician time and widening reach.
- Secure research funding to add evidence-based modules for tobacco, vaping and prescription-drug misuse, priority gaps highlighted in the systematic review. Multi-substance capability will increase the app's use, allowing veterans to address co-occurring risk behaviours within a single, familiar platform.

Study outputs

- Full RCT manuscript ready for journal submission.
- Systematic review under peer review at PLOS Digital Health (PROSPERO [CRD42023459786](https://doi.org/10.1371/CRD42023459786)).
- De-identified dataset and code posted on the Open Science Framework.
- Conference abstracts accepted at Forces in Mind Trust Research Conference and CIMVHR 2025.

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Prepared by: Daniel Leightley, Grace Williamson, Ewan Carr, Laura Goodwin, Nicola T. Fear and Dominic Murphy, King's College London, Lancaster University and Combat Stress.

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