

A hybrid type-2 effectiveness-implementation trial of a redesigned digital brief intervention to address risky alcohol consumption among women attending breast screening services

Jasmin Grigg^{1,2}, Alex Waddell³, Peta Stragalinis^{1,2}, Charlotte Sutton^{1,2}, Christopher J Greenwood^{4,5}, Darren Lockie⁶, Michelle Giles⁶, Joshua Seguin³, Ling Wu³, Chris Prawira³, Robin Bell⁷, Victoria Manning^{1,2} & Dan I. Lubman^{1,2}

¹Turning Point, Eastern Health, Melbourne, Australia, ²Monash Addiction Research Centre, Eastern Health Clinical School, Monash University, Melbourne, Australia, ³Action Lab, Department of Human Centred Computing, Monash University, Melbourne, Australia, ⁴School of Psychology, Deakin University, Geelong, Australia, ⁵Centre for Adolescent Health, Murdoch Children's Research Institute, Melbourne, Australia, ⁶Maroondah BreastScreen, Eastern Health, Melbourne, Australia, ⁷School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

Presenter's email: jasmin.grigg@monash.edu

Introduction: Alcohol is a major modifiable breast cancer risk factor, even in very low amounts. Yet, risky alcohol consumption has not been a target of wide-scale breast cancer prevention efforts. We previously co-designed the prototype Health4Her digital brief alcohol and lifestyle intervention with women for implementation in breast screening services, which was demonstrated to increase alcohol-breast cancer literacy. After ex-post analysis and consumer redesign to enable online self-completion, this study aimed to examine implementation, and effectiveness on drinking intentions, of the production-ready version of this intervention.

Method: This hybrid type-2 effectiveness-implementation trial comprised a randomised controlled trial of Health4Her implemented onsite, a pre-post pilot study of Health4Her accessed at home post-screening, and participant feedback interviews. Women reporting any drinking level were recruited from Maroondah BreastScreen (Melbourne, Australia) in September-October 2023. After online baseline assessment (t0), the active trial arm (and non-randomised pilot arm) received brief alcohol and lifestyle intervention. The control trial arm received brief lifestyle intervention only. Follow-up assessments/interviews occurred immediately (t1) and/or 4-weeks later (t2).

Results: Of 575 women attending breast screening during recruitment, the participation rate was 31.65% (204/575); 24.87% (143/575) participated in the onsite trial and an additional 10.61% (61/575) participated offsite (pilot study). For the onsite trial, between t0 and t1, change in intentions to reduce alcohol consumption was significantly greater ($p = 0.042$) in the intervention arm ($b = 0.63$, 95% confidence interval 0.40, 0.87) compared to control ($b = 0.29$, 95% confidence interval 0.06, 0.52). Awareness of alcohol as a clear breast cancer risk factor increased to a greater extent in the intervention compared to control arm, and alcohol consumption reduced in both arms. A similar pattern of change over time was found in the pilot study. Participants identified several barriers to participating in Health4Her onsite (e.g., due to commitments following the screening appointment, such as work or caregiver responsibilities), which were overcome with the option of offsite participation.

Discussion/Conclusion: The redesigned Health4Her intervention, implemented onsite or post-screening, is effective in increasing women's intentions to reduce alcohol consumption. This study provides data on two strategies for implementing Health4Her in the context of breast screening, and will support expansion to other breast screening services.

Practice/Policy Implications: Brief alcohol intervention embedded within national breast screening programs reaches a population previously overlooked as a target of alcohol health

promotion, has potential for wide-scale implementation, and is particularly relevant given this group's rising prevalence of risky drinking, and evidence that very low consumption increases breast cancer risk.

Disclosure of Interest Statement: This work was supported by Shades of Pink. The funders had no role in any part of this study. DL, VM, RB and JG have received grants from the National Health and Medical Research Council. DL, RB, VM and AW have received grants from the Medical Research Future Fund. DL, VM and JG have received funding from VicHealth, the Eastern Health Foundation, and the Victorian Department of Health. DL and VM have received grants from the HCF Research Foundation, the Alcohol and Drug Research Innovation Agenda, the Alcohol and Drug Foundation, the Eastern Health Foundation, the Victorian Responsible Gambling Foundation and the National Centre for Clinical Research on Emerging Drugs. DL has received grants from Google, the Australian Research Council, and the Australian Department of Health and Aged Care. VM has received funding from the Transport Accident Commission (Victoria). JG has received funding from the Victorian Department of Transport and Planning. DL is supported by a National Health and Medical Research Council Leadership Fellowship.