Title	**The WWHIDE Framework (Web-based Workforce Health Intervention Development and Evaluation): developing a guide for workplace web-based trials.**
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Abstract

Introduction
The workplace is an important setting for promoting population health. Web-based interventions are often used in occupational settings for delivering education and training, skills development and/or behaviour change intervention to workers and line managers. Such interventions may effect positive changes at the individual or organisational level. However, conducting trials in 'real-world' workplace settings presents unique challenges for researchers. Further, the quality of reporting on the design, implementation, and evaluation of web-based interventions used in workplace settings is highly variable. We aimed to develop a framework to guide researchers through the key considerations in developing web-based interventions and evaluating their outcomes in trials conducted in workplace settings.

Methods
The framework development involved a two-stage public engagement process:
(a) Case study analysis: of 6 web-based interventions published between 2020-2023 to reflect on design and implementation challenges and draft the framework.
(b) Stakeholder consultation: to discuss, refine, and agree key considerations.
The 6 case studies were web-based workforce interventions (led by Blake and colleagues), developed using collaborative-participatory design approaches, and using Agile or ASPIRE methodologies. The interventions were targeted to *workers* (providing education, skills training, self-management of chronic conditions) or *line managers* (raising awareness, providing skills and confidence to support workers). The case study interventions provide education, skills building and support for behaviour change, with topic areas including *health promotion* (alcohol prevention, mental health), *health protection* (vaccination, health screening) and *self-management* (chronic pain). Stakeholder consultation involved 30 line managers, employees, healthcare professionals, health researchers and members of the public, who engaged in synchronous (group video-call, n=18) or asynchronous (individual video-call or email, n=12) discussion.

Results

This study produced The WWHIDE Framework (Web-based Workforce Health Intervention Development and Evaluation). There are 11 framework components, each with a series of key questions to consider relating to the challenges and enablers of contemporary web-based research conducted in the workplace setting: (1) intervention design and development, (2) intervention delivery modality, (3) intervention engagement, (4) research design, (5) comparison group, (6) recruitment of organisations to research involving web-based interventions, (7) recruitment of employee participants to research involving web-based interventions, (8) outcomes and intended actions / behaviour change, (9) attrition and retention, (10) user acceptance and satisfaction with the intervention, (11), routes to 'real-world' context and scale-up.

Conclusions

The WWHIDE Framework can be used to inform the design of future workplace health research studies involving web-based interventions targeting workers or line managers, for education, training, and/or behaviour change.