Project Summary for IAL Website

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Project Title:	Development and Evaluation of Building Resilience@Work Training among Healthcare Workers
Project Number:	GA19-02
Year of Approval:	2020
Funding Source:	WDARF
Objectives and intended outcomes of the project:	This study aims to (1) develop and validate an online training programme, entitled "Building Resilience@Work" (BR@W); (2) evaluate its effectiveness on resilience, job engagement, intention to leave, employability, and work performance; and (3) explore healthcare workers' experience of the BR@W.
Project Team	
Principal Investigator:	A/Prof Lydia Lau (Past PI: Prof Lau Ying)
Summary of Project (up to 300 words)	

Project Overview

This project implemented a two-phase research design over three years to develop and evaluate *Bounce Back at Work (BR@W)*, a web-based resilience training programme designed for healthcare workers.

Phase 1 focused on the development and validation of the BR@W training programme. The programme was guided by integrated theoretical perspectives from the cognitive behavioural model, acceptance and commitment approaches, and problem-solving theory. Six structured weekly online sessions were developed based on established theoretical and empirical foundations. Ethical standards and content validity were ensured through recognised evaluation frameworks, including the Health on the Net Code of Conduct and the Health-Related Website Evaluation Form.

The BR@W programme drew on evidence-based therapies and systematic reviews. It was delivered as a self-paced training programme comprising six online sessions that incorporated self-monitoring activities, reflective homework, and opportunities for peer and professional support. The training aimed to strengthen healthcare workers' capacity to adapt to workplace challenges and recover from adversity, thereby enhancing resilience and supporting improved productivity and quality of work.

Phase 2 evaluated the effectiveness of the BR@W programme using a sequential mixed-methods design. A two-armed randomised controlled trial involving 410 healthcare workers compared outcomes between participants who completed the training and those in a waiting-list control group. Outcomes assessed included resilience, work engagement, intention to leave, employability, and work performance at three time points: pre-training, post-training, and three months after training. In addition, virtual individual interviews with a purposive sample of 33 participants explored their experiences of the programme.

Contributions

Recognising the complexity of resilience within dynamic healthcare environments, the BR@W programme demonstrated the potential of resilience training to enhance resilience, work engagement, and workforce well-being. These improvements could contribute to strengthening workforce sustainability and reducing turnover among healthcare workers in Singapore.

Summary of Project Findings, Deliverables and Impacts (up to 500 words)

Quantitative Findings from the Randomised Controlled Trial

The effectiveness of the BR@W programme was evaluated through a two-armed randomised controlled trial. Generalised estimating equations (GEE) analyses demonstrated that participants in the intervention group experienced significantly greater improvements in resilience compared with those in the control group. Specifically, participants who completed the BR@W training showed higher scores on the Brief Resilience Scale at both post-intervention (T1) and three-month follow-up (T2) relative to baseline (T0). The magnitude of the intervention effects ranged from small to moderate, as indicated by Hedges' g effect sizes at both follow-up time points.

The intervention also demonstrated positive effects on work engagement. Significant Group × Time interaction effects were observed at T1 across all subscales and total scores of the short version of the Utrecht Work Engagement Scale. These findings indicated that participants who completed the training experienced immediate improvements in work engagement following the intervention. However, at the three-month follow-up, sustained effects were observed primarily for the vigor subscale, suggesting that the programme had a lasting impact on participants' energy and persistence at work.

Additional work-related outcomes were also examined. Participants in the intervention group showed a significantly greater reduction in intention to leave their jobs, as measured by the Anticipated Turnover Scale, at the three-month follow-up compared with the control group. Improvements were also observed in employability, with participants reporting higher scores on the Self-Perceived Employability Scale immediately after the intervention. Furthermore, the intervention group demonstrated a significant reduction in counterproductive work behaviours, as measured by the counterproductive work behaviour subscale of the Individual Work Performance Questionnaire at T2.

Qualitative Findings

Qualitative interviews were conducted to further explore participants' experiences with the BR@W training. Framework analysis identified three key themes reflecting participants' engagement with and perceived impact of the programme. These themes included learning through online interactive tools, meaningful interaction with the BR@W training content, and the development of greater workforce readiness. Participants reported that the programme's structured activities and interactive elements supported reflection and practical application of resilience strategies in their work contexts.

Conclusion

Overall, the BR@W training programme demonstrated promising outcomes in improving resilience and several work-related outcomes among healthcare workers in Singapore. The findings indicated that a web-based, asynchronous, and self-paced resilience training programme is both feasible and acceptable in healthcare settings. Improvements in resilience, work engagement, employability, and intention to remain in the workforce highlighted the potential of such digital interventions to support workforce sustainability. Continued refinement of the training components may further strengthen its long-term impact and sustainability.

Publication

Lau, Y., Choi, K. C., Wong, S. H., Ang, W. W., Ang, W. H. D., & Lau, S. T. (2025). A randomized controlled trial investigating digital resilience training for healthcare professionals. *Scientific Reports*, *15*(1), 44514.

Ang, W. H. D., Lim, Z. Q. G., Lau, S. T., Dong, J., & Lau, Y. (2024). Unpacking the experiences of health care professionals about the Web-Based Building resilience at work program during the COVID-19 pandemic: framework analysis. *JMIR Medical Education*, *10*(1), e49551.