Co-production of BACK-on-LINE™, a work-based digital self-management of low back pain, for implementation and scaleup the rail industry

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Introduction: Low back pain (LBP) is a global leading cause of disability associated with substantial loss of work productivity. Self-management involving physical activity and exercise (PA&E) along with education is the core component of management for the most encountered non-specific LBP. However, integrating self-management to help people adopt PA&E behaviours within workplace is challenging. With employee and employer representatives in Transport for London, we developed, and feasibility tested a work-based digital self-management intervention called BACK-on-LINE™ to empower workers to adopt PA&E behaviours designed to alleviate back pain in work.

Purpose/Aim: Adapt design and features of BACK-on-LINE™ to ensure implementation and scaleup across the whole of the rail industry in Great Britain (GB rail).

Materials and Methods: Co-production methodology in form of stakeholder consultation workshops was applied. Participants were recruited via Rail Safety and Standards Board (RSSB) spanning the entire GB rail sector. Two 2-hour online workshops were conducted with: i) GB rail employer representatives in occupational health, human factors, health & wellbeing, line management and union and ii) GB rail employees with LBP. Normalisation Process Theory (NPT) informed discussions to maximise BACK-on-LINE™ implementation and scaleup. The workshops explored occupational health pathways, access, and digital resources for self-managing LBP in work. They were facilitated by the same researcher (LS), were audio-recorded, transcribed, and analysed independently. Thematic analysis was conducted in NVivo with findings from the workshop with employers informing the subsequent workshop with employees.

Results: Workshop participants (n=15) were from six GB rail organisations and included RSSB Musculoskeletal Disorders Group physiotherapists (n=2), nurses (n=2), human factors specialist (n=1), unions (n=1), safety officer (n=1), and employees with LBP (n=9). Several common and unique themes to the employer and employee groups were identified. Both groups recognised LBP an unmet need in the rail industry and viewed digital health interventions empowering workers to self-manage back pain in work enthusiastically. Digital content relatable to rail workers, accessible offline, with resources searchable by job, setting and exercise difficulty were perceived important aspects for implementation/scaleup. Organisational culture offering workers time, space, and support to adopt 'healthy back' behaviours, and monitoring intervention success in preventing sickness absence was considered critical.

Conclusion(s): With ageing workforce and high rates of sickness absence, scalable interventions supporting people's health in workplace are in sharp focus. This study findings informed technological adaptations of BACK-on-LINE™ to maximise its implementation and scalability within GB rail sector and informed outcomes for next evaluation phase. This research demonstrated value of partnership- and theory-based approaches to develop interventions allowing for early focus on barriers and co-production of widely acceptable solutions.

Keywords: Low back pain, Work-based self-management, Digital