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Study protocol for the “BEST” digital tool to identify psychosocial risks at work and enhance employee well-being and mental health

Submission date
16/12/2025

Recruitment status
No longer recruiting

Registration date
18/12/2025

Overall study status
Completed

Last Edited
18/12/2025

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Healthcare workers are often exposed to psychosocial risks such as high workload, low support, and emotionally demanding situations, which can harm mental health and well-being. This study aims to develop and evaluate a new digital tool, BEST, that identifies psychosocial risks and provides evidence-based suggestions to improve working conditions.

Who can participate?
Healthcare and social services workers in participating Québec institutions who have held the same position for at least six months and can understand French. International focus groups include workers from Canada, France, and Mexico with relevant local experience.

What does the study involve?
The study includes: 1) a workshop to test BEST’s prototype, 2) interviews after a two-week pre-test, 3) a 12-month implementation in work teams and 4) international focus groups to assess potential use of the tool in other countries. Participants may complete questionnaires, use the digital tool, or take part in interviews and discussions.

What are the possible benefits and risks of participating?
Possible benefits include a better understanding of workplace risks and tailored suggestions to improve work environments. Risks are minimal and relate mainly to time involvement and discussing work stress.

Where is the study run from?
The study is coordinated by Université du Québec à Rimouski and Université Laval, in partnership with Québec healthcare institutions and international collaborators.

When is the study starting and how long is it expected to run for?
February 2023 to January 2025

Who is funding the study?
The study is funded by the New Frontiers in Research Fund – Special Call: Research for Postpandemic Recovery (NFRFR-2022-00149) (Canada)

Who is the main contact?
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Additional identifiers

Study information

Scientific Title
Development, implementation and evaluation of the user-centered “BEST” digital tool for identifying psychosocial risks at work and improving employee well-being: a study protocol

Study objectives
Psychosocial risks at work (PRW), such as high psychological demands, low job control, lack of support, emotional demands, digital stressors, ethical conflicts, incivility, and psychosocial safety climate, substantially increase the likelihood of mental health problems among healthcare and social services workers. These problems have intensified post-pandemic and contribute to absenteeism, burnout, productivity loss, and workforce instability. Despite the urgency, few accessible, validated digital tools exist to help workplaces assess PRW and implement preventive organizational practices.

This project aims to bridge this gap by developing, implementing, and evaluating a digital tool named BEST (Bien-Être et Santé au Travail, or Wellbeing and Health at Work). This user-centered tool is designed to facilitate collaboration between employees and supervisors to reduce PRW. BEST offers two core functionalities:
1. An automated assessment of PRW as well as indicators of well-being, health, and productivity, based on a validated questionnaire (Truchon et al., 2022)

2. Tailored suggestions to reduce identified PRW, drawn from a guide of evidence- based practices (Gilbert-Ouimet et al., 2009) complemented by employees' input to support the co-construction of action plans.

The objectives are as follows:
1. To develop, implement and evaluate BEST among Quebec healthcare workers
1.1. To validate the functionalities of BEST's prototype
1.2. To assess BEST's user experience
1.3. To evaluate BEST's initial 12-month effectiveness in reducing PRW and improving mental health, well-being, and productivity
2. To explore BEST's potential for scaling up to other settings and sectors in Canada, France, and Mexico

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 06/07/2023, CIUSSS de la Capitale-Nationale (2601 Chem. de la Canardière, Quebec, G1J 0A4, Canada; +1 (0)418-663-5000; ciusss-capitalenationale.gouv.qc.ca), ref: 2023-2829, _RIS

Primary study design
Observational

Secondary study design
Sequential multi-phase observational design, including a qualitative deliberative design (Phase 1), a qualitative descriptive design (Phases 2-4), and a pre–post convergent mixed-methods design (Phase 3)

Study type(s)

Health condition(s) or problem(s) studied
Psychosocial risks at work and their impacts on mental health, well-being, and work productivity among healthcare and social services workers.

Interventions
This study uses a user-centered, mixed-methods, multi-phase design, combining qualitative and quantitative components to develop, implement, and evaluate BEST; a digital tool designed to identify psychosocial risks at work (PRW) and support organizational practices to reduce them.

Phase 1: Validation of the prototype's functionalities
Design: A deliberative workshop, the conceptual framework developed by Boyko et al. (2012), will be conducted to validate BEST's functionalities. This method aims to share knowledge with the right actors, in the right format, at the right time, while valuing experiential knowledge and allowing both convergent and divergent perspectives.
Participants: Using maximum variation sampling, at least 50 participants will be recruited from a pool of approximately 100 invited individuals, including healthcare workers (managers and staff), members of the interdisciplinary steering committee, and industrial partners.
Data collection and procedures: The 5-hour workshop (non-consecutive) will include: a plenary demonstration of BEST's features, subgroup discussions, and a plenary synthesis. Questions will address content relevance, clarity, and user-friendliness. Discussions will be audio- and video-recorded.

Data analysis: Recordings will be transcribed, verified by committee members, and analyzed thematically following Braun & Clarke's approach: Themes will reflect participants' perceptions and guide revisions to BEST.

Phase 2: Evaluation of user experience
Design: A qualitative descriptive study will explore healthcare workers' and supervisors' user experience.
Participants: Approximately 20 participants (or until saturation) will be recruited using the same eligibility criteria as Phase 1.
Data collection and procedures: Participants will pre-test BEST for two weeks. A 60-minute semi-structured videoconference interview will follow, documenting perceptions of usability, clarity, acceptability, and factors influencing adoption and implementation. Interviews will be recorded.
Data analysis: Transcripts will be verified for accuracy. Approximately 10% of interviews will undergo co-analysis. Data will be thematically analyzed using Alceste software to identify convergent and divergent viewpoints. Findings will inform the refinement of BEST's experimental version.

Phase 3: Assessment of BEST's 12-month effectiveness
Design: A controlled pre–post convergent mixed-methods design will be used to evaluate BEST's implementation and effectiveness according to the RE-AIM QuEST framework.
Participants: Approximately 400 healthcare workers from an Integrated Health and Social Services Center will participate. Operationally, this includes 12–20 teams of at least 20 employees each, divided into intervention (6–10 teams) and control groups (6–10 teams).
Intervention: Teams in the intervention group will use BEST for 12 months. This includes consulting: the automated PRW assessment, the visual dashboard, and suggested organizational practices, before collaboratively developing and implementing an action plan. The control group will complete the PRW questionnaire but will not receive diagnostic dashboards or organizational practice suggestions. However, ethically sensitive risk findings (e.g., workplace violence) will still be communicated.
Data collection and procedures: Data will be collected using the OHWQ (integrated into BEST), administered at baseline and 12 months in both groups. The intervention group will complete the OHWQ directly in BEST; controls via LimeSurvey. Additional quantitative and qualitative implementation data (fidelity, adoption, sustainability) will be collected at 12 months through the RE-AIM QuEST questionnaire. Focus groups may also be conducted.
Data analysis: Descriptive statistics will characterize the sample. To assess effectiveness, pre–post comparisons between intervention and control groups will be performed using: Generalized estimating equations (GEE) to account for repeated measures, an interaction term (group × time) for the intervention effect, adjustments for confounders (employment type, schedule, age, sex, gender identity, minority status), multilevel modeling if power allows (to account for clustering by work teams) and qualitative implementation data will be analyzed via content analysis and triangulated with quantitative findings.

Phase 4: Exploration of BEST's scalability
Design: A descriptive qualitative study involving focus groups in Canada, France, and Mexico.
Participants: Healthcare workers with experience relevant to each national context.
Data collection and procedures: Three focus groups (one per country) will assess potential international scalability using the Innovation Scalability Self-Administered Questionnaire (ISSAQ 4.0) as the guiding structure. Discussions will be recorded and transcribed.
Data analysis: A continuous thematization method will be used. NVivo14 will facilitate coding, extraction, and organization of themes related to scalability.

Intervention Type

Other

Primary outcome(s)
1. Psychosocial risks at work and indicators of health, well-being, and productivity measured using the Occupational Health and Well-Being Questionnaire (OHWQ), which assesses documented PRWs (psychological demands, job control, reward, social support), emerging PRWs (digital stressors, emotional demands, ethical culture, PSC, incivility), and indicators (psychological distress, burnout, job satisfaction, work-life conflict, musculoskeletal disorders, absenteeism, presenteeism) at baseline (T0) and 12 months (T12)

2. Extent to which BEST was delivered and used as intended measured using quantitative and qualitative items from the RE-AIM QuEST questionnaire, assessing use of the Guide of Organizational Practices facilitators and barriers to the Guide's use adaptations of BEST to local contexts (e.g., employee–supervisor consultation modalities), at 12 months (T12)

3. User perceptions of BEST's functionalities (relevance, clarity, usability) measured using thematic analysis of deliberative workshop discussions (Lavis Framework; recorded, transcribed, coded) at immediately after the workshop (Phase 1)

4. User experience indicators (clarity, relevance, usability, acceptability, adoption facilitators /barriers) measured using semi-structured interview data analyzed by thematic analysis using Alceste software at after a 2-week pre-test period

Key secondary outcome(s))

Completion date
31/01/2025

Eligibility

Key inclusion criteria
1. Be a healthcare or social services worker (clinical staff, non-clinical staff, managers, or supervisors)
2. Be employed in a participating healthcare or social services institution in Québec
3. Have occupied the same position for at least 6 months (criterion applied consistently across Phases 1–3)
4. Ability to understand French
5. For international scale-up groups (Canada, France, Peru): relevant local experience in the corresponding country

Healthy volunteers allowed
Yes

Age group
Mixed

Lower age limit
18 years

Upper age limit
99 years

Sex
All

Total final enrolment
300

Key exclusion criteria
1. Employment in the current position for less than 6 months
2. Not employed in a participating organization
3. Inability to use or access the digital tool or complete online questionnaires
4. Refusal or inability to provide informed consent

Date of first enrolment
15/02/2023

Date of final enrolment
30/09/2024

Locations

Countries of recruitment
Canada

France

Mexico

Sponsor information

Organisation
Université du Québec à Rimouski

ROR
https://ror.org/049jtt335

Organisation
Université Laval

ROR
https://ror.org/04sjchr03

Funder(s)

Funder type

Funder Name
New Frontiers Special Call – Research for Postpandemic Recovery (NFRFR-2022-00149)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available