

CAN EMAIL-BASED WORKPLACE INTERVENTIONS IMPROVE PHYSICAL ACTIVITY AMONG PROFESSIONAL EMPLOYEES?

EVIDENCE FROM PUBLIC-SECTOR LIBRARIANS IN BRUNEI DARUSSALAM

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1 WHY THIS MATTERS

A GLOBAL CONCERN
Physical inactivity is a major public health and economic burden, contributing to non-communicable diseases and workplace productivity loss.

$\approx 1/3$ of adults worldwide are insufficiently active

THE SITUATION IN BRUNEI DARUSSALAM

- 21% of adult males physically inactive
- 34% of adult females physically inactive

HEALTH IMPACT

- Physical inactivity increases risk of NCDs: heart disease, diabetes, poor mental health, and early death.
- NCDs are among the leading causes of death in Brunei Darussalam.

THE WORKPLACE CONTEXT
Workplaces are a key setting to promote physical activity through supportive environments and opportunities.

OUR POPULATION
Public-sector librarians face sedentary work, high screen time, extended sitting, and unique occupational risks.

This study evaluated whether a theory-based, email-based workplace intervention could improve psychological determinants and physical activity behaviour among public-sector librarians in Brunei Darussalam.

2 METHODS

1. STUDY DESIGN
Quasi-experimental pretest-posttest study

2. PARTICIPANTS
153 public-sector librarians in Brunei Darussalam

- 78 participants received the email intervention
- 75 participants continued their usual routine

3. INTERVENTION
Weekly bilingual email-based intervention delivered over 12 weeks

The intervention included:

- Motivational messages
- Infographic-based content
- Behavioural prompts
- Practical physical activity strategies

4. INTERVENTION GOALS
The intervention was designed to:

- Increase confidence to engage in physical activity
- Highlight the benefits of physical activity
- Reduce perceived barriers to physical activity
- Increase awareness of health risks related to inactivity
- Reinforce beliefs that physical activity can improve health
- Encourage motivation and intention to become physically active

5. THEORETICAL FRAMEWORK
The intervention was informed by established behavioural theories, including:

- Social Cognitive Theory
- Theory of Planned Behaviour
- Protection Motivation Theory
- Transtheoretical Model

3 OUTCOMES ASSESSED

Measured key areas related to physical activity and the factors that influence it.

PHYSICAL ACTIVITY OUTCOMES	PSYCHOSOCIAL OUTCOMES
<p>1. LEISURE-TIME PHYSICAL ACTIVITY Physical activity done outside of work.</p> <p>2. WORKPLACE PHYSICAL ACTIVITY Physical activity done during work hours.</p>	<p>3. CONFIDENCE Confidence in your ability to be physically active.</p> <p>4. AWARENESS Awareness of the health risks of not being active.</p> <p>5. PERCEIVED BARRIERS Things that make it difficult to be physically active.</p> <p>6. BELIEFS Beliefs that physical activity can improve health.</p> <p>7. MOTIVATION AND INTENTION Motivation and plans to be more physically active.</p>

These outcomes help to understand not only changes in activity levels, but also the thoughts and beliefs that support lasting healthy habits.

4 KEY FINDINGS

The 12-week email programme helped improve physical activity and related attitudes among participants.

153 participants took part compared with a group that continued their usual routine

<p>1. MORE CONFIDENCE To express the intention to be physically active.</p> <p>IMPROVED p < .001 Moderate effect</p>	<p>2. MORE MOVEMENT AT WORK Participants were more active during work hours.</p> <p>IMPROVED p < .001 Moderate effect</p>	<p>3. MORE ACTIVE OUTSIDE WORK Participants increased their physical activity in their leisure time.</p> <p>IMPROVED p < .001 Moderate effect</p>
<p>4. FEWER BARRIERS Participants reported fewer obstacles to being physically active.</p> <p>REDUCED p < .001 Moderate effect</p>	<p>5. STRONGER BELIEF IN BENEFITS Participants increasingly believed that physical activity can improve health.</p> <p>IMPROVED p < .001 Small to moderate effect</p>	

IN SHORT: A simple 12-week email programme led to more movement, greater confidence, fewer barriers, and stronger beliefs about the benefits of physical activity.

5 KEY TAKEAWAY

- A theory-based, email-based workplace intervention improved physical activity (leisure-time and workplace), self efficacy, reduced perceived barriers, and improved response efficacy among public-sector librarians in Brunei Darussalam.
- Practical, scalable, and low-cost workplace strategies may help support healthier and more active professional employees.
- As librarians share similar desk-based occupational characteristics with other ISCO-08 professional groups, this intervention approach may also be applicable to other professional workplace settings.

IMPROVED OUTCOMES

- Physical Activity (Leisure-time & Workplace)
- Self Efficacy
- Perceived Barriers
- Response Efficacy
- Practical
- Scalable
- Low-cost

Similar desk-based occupational characteristics

Librarians → Other ISCO-08 Professional Groups

This intervention approach is applicable to other professional workplace settings within the International Standard Classification of Occupations 2008 (ISCO-08) Major Group 2—such as engineers, health specialists, and business professionals—with which librarians share the same classification.